SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's full Name: Everett White Examiner #: 67057 Date: 4/17/2002
Art Unit: 1623 Phone Number 308-4621 Serial Number: 09/701,680
Mail Box: CM1-8B19 and Bldg/Room Location: CM1-7B13 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be search Include the elected species or structures, key words, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: See Bib Data Sheet

Inventors (please provide full names): See Bib Data Sheet

Earliest priority Filing Date: See Bib Data Sheet

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please search the process for forming aggregates of hydrophobic groups-containing polysaccharide in water of Claims 1-6. Claim 5 set forth a structure of a hydrophobic group that may be attached to a polysaccharide. A search of this polysaccharide structure being used in the instant claimed process is requested. A copy of the claims and the abstract is provided. Pages 13, 24 and 25 of the instant specification are also provided to give the searcher more examples of the hydrophobic group-containing polysaccharide of Claim 5.

The Bib Data Sheet which discloses the inventor names, title of the invention, and the earliest priority filing date is also provided.

****

Point of Contact:
Alexandra Waclawiw
Technical Info. Specialist
CM1 6A02 Tel: 308-4491

STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher:	NA Sequence (#)	STN ✓
Searcher Phone #:	AA Sequence (#)	Dialog
Searcher Location:	Structure (#) 3	Questel/Orbit
Date Searcher Picked Up: 4-22-02	Bibliographic	Dr. Link
Date Completed: 4-22-02	Litigation	Lexis/Nexis
Searcher Prep & Review Time:	Fulltext	Sequence Systems
Clerical prep time:	Patent Family	WWW/Internet
Online Time:	Other	Other (specify)

PTO-1590 (1-2000)

```
=> d his

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                  ACT EWHITE2/A
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L3                STR
L4   (       144)SEA FILE=REGISTRY SSS FUL L3
L5                STR
L6             88 SEA FILE=REGISTRY SUB=L4 SSS FUL L5
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L22            23 S L2 AND L21

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L24            57 S L6
L25         93216 S L20
L26             8 S L24 AND L25
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L30            16 S L24 AND L29
L31            16 S L26 OR L30
L32            18 S L28 OR L31
L33            22 S L23 NOT L32
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USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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STRUCTURE FILE UPDATES:   21 APR 2002  HIGHEST RN 406458-32-0
DICTIONARY FILE UPDATES:  21 APR 2002  HIGHEST RN 406458-32-0

TSCA INFORMATION NOW CURRENT THROUGH July 7, 2001

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Calculated physical property data is now available.  See HELP PROPERTIES
for more information.  See STNote 27, Searching Properties in the CAS
Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> d his l1-l20;d que l21; d his l22

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                CRN OR 9004-62-0/CRN OR 9005-80-5/CRN OR 9005-82-7/CRN OR
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N OR 9057-02-7/CRN)

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L22 23 S L2 AND L21

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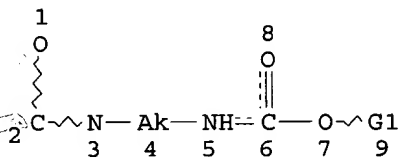

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CONNECT IS E2 RC AT 4
CONNECT IS E1 RC AT 10
DEFAULT MLEVEL IS ATOM
GGCAT IS PCY AT 11
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M12-X50 C AT 10
ECOUNT IS M17 C AT 11

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 11

STEREO ATTRIBUTES: NONE
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100.0% PROCESSED 354514 ITERATIONS 144 ANSWERS
SEARCH TIME: 00.00.17

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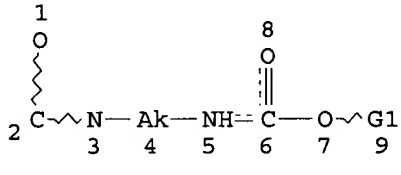

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DEFAULT MLEVEL IS ATOM
GGCAT IS PCY AT 11
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M12-X50 C AT 10
ECOUNT IS M17 C AT 11

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STEREO ATTRIBUTES: NONE
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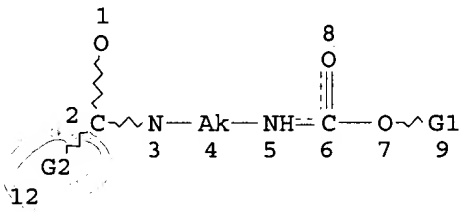


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DEFAULT ECLEVEL IS LIMITED
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ECOUNT  IS M17 C  AT  11

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RING(S) ARE ISOLATED OR EMBEDDED
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STEREO ATTRIBUTES: NONE
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→ none of these have structures available.

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→ component registry numbers since these are not structurally searchable

CRN OR 9004-62-0/CRN OR 9005-80-5/CRN OR 9005-82-7/CRN OR
9012-76-4/CRN OR 9013-95-0/CRN OR 9036-88-8/CRN OR 9037-22-3/CR
N OR 9057-02-7/CRN)

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L22 23 S L2 AND L21

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FILE 'HCAPLUS' ENTERED AT 10:39:57 ON 22 APR 2002
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 22 Apr 2002 VOL 136 ISS 17
FILE LAST UPDATED: 21 Apr 2002 (20020421/ED)

This file contains CAS Registry Numbers for easy and accurate
substance identification.

CAS roles have been modified effective December 16, 2001. Please
check your SDI profiles to see if they need to be revised. For
information on CAS roles, enter HELP ROLES at an arrow prompt or use
the CAS Roles thesaurus (/RL field) in this file.
'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

=> d his l23-

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L27 110 S L2
L28 2 S L27 AND (AGGLOMER? OR AGGLOMER?/AB OR HOMOGEN? OR HOMOGEN?/AB
L29 203172 S PULLULAN OR AMYLOPECTIN OR AMYLOSE OR DEXTRAN OR CELLULOSE OR
L30 16 S L24 AND L29
L31 16 S L26 OR L30
L32 18 S L28 OR L31
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FILE 'HCAPLUS' ENTERED AT 10:39:57 ON 22 APR 2002

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'L-18' IS NOT A VALID FORMAT FOR FILE 'HCAPLUS'
=> d .ca hitstr l32 1-18;d .ca hitstr l33 1-22

L32  ANSWER 1 OF 18  HCAPLUS  COPYRIGHT 2002 ACS
ACCESSION NUMBER:         2001:176762  HCAPLUS
DOCUMENT NUMBER:          134:227378
TITLE:                    Skin irritation-preventing agents for dishwashing
                          detergents
INVENTOR(S):              Yano, Yoshihiro; Shimada, Kunio
PATENT ASSIGNEE(S):       Nippon Oil and Fats Co., Ltd., Japan
SOURCE:                   Jpn. Kokai Tokkyo Koho, 10 pp.
                          CODEN: JKXXAF
DOCUMENT TYPE:            Patent
LANGUAGE:                 Japanese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
     JP 2001064185      A2   20010313       JP 1999-246516   19990831
AB   The invention relates to a skin irritation-preventing agent consisting of
     a hydrophobic group-contg. polysaccharide deriv., suitable for use in a
     dishwashing detergent.  A pullulan cholesterol deriv. was prepd. from
     pullulan and N-(6-isocyanatohexyl)cholesteryl carbamate, and combined in a
     dishwashing detergents to examine its skin roughening-preventing effect.
IC   ICM  A61K031-715
     ICS  A61K007-00; A61K031-716; A61K031-719; A61K031-721; A61K031-722;
          A61K031-724; A61P017-00; C11D003-22
CC   63-6 (Pharmaceuticals)
     Section cross-reference(s): 46
ST   polysaccharide deriv skin irritation dishwashing detergent;
     pullulan cholesterol deriv dishwashing detergent
IT   57-88-5, Cholesterol, reactions   822-06-0, Hexamethylene diisocyanate
     9057-02-7, Pullulan   25357-82-8
     RL: RCT (Reactant); RACT (Reactant or reagent)
        (prepn. of polysaccharide derivs. as skin irritation-preventing agents
        for dishwashing detergents)
IT   136462-90-3P 190280-37-6P   301297-12-1P
     RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological
     study); PREP (Preparation); USES (Uses)
        (skin irritation-preventing agents contg. polysaccharide derivs. for
        dishwashing detergents)
IT   9057-02-7, Pullulan
     RL: RCT (Reactant); RACT (Reactant or reagent)
        (prepn. of polysaccharide derivs. as skin irritation-preventing agents
        for dishwashing detergents)
RN   9057-02-7  HCAPLUS
CN   Pullulan (9CI)  (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT   136462-90-3P 190280-37-6P
     RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological
     study); PREP (Preparation); USES (Uses)
        (skin irritation-preventing agents contg. polysaccharide derivs. for
        dishwashing detergents)
RN   136462-90-3  HCAPLUS
CN   Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carb
     amate (9CI)  (CA INDEX NAME)
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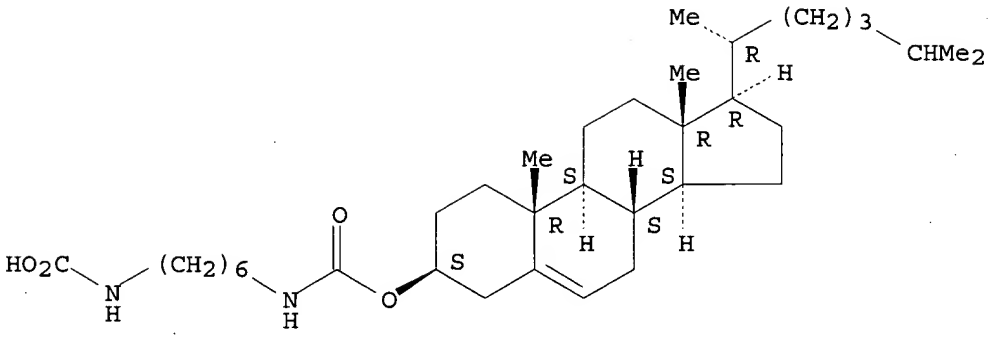
CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 190280-37-6 HCAPLUS
CN D-Mannan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

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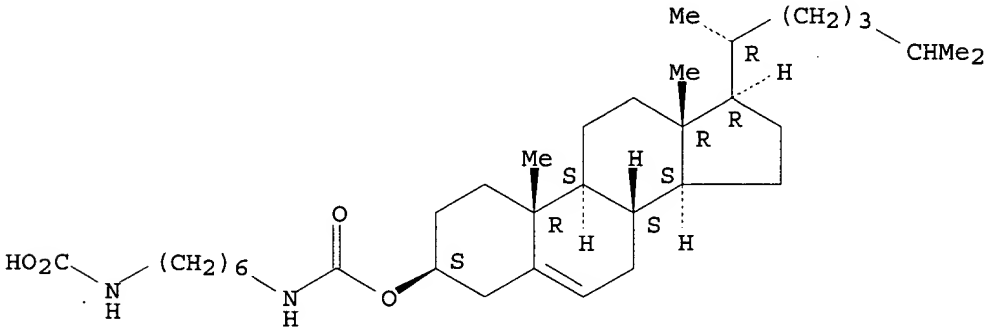
CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9036-88-8

CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L32 ANSWER 2 OF 18 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:725671 HCAPLUS
DOCUMENT NUMBER: 133:297935
TITLE: Method of forming **agglomerates** of hydrophobic group-containing polysaccharides
INVENTOR(S): Hosotani, Ryuzo; Hayashi, Akio; Nakano, Yoshio
PATENT ASSIGNEE(S): Nof Corp., Japan
SOURCE: PCT Int. Appl., 36 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000059948	A1	20001012	WO 1999-JP1684	19990331
W: AU, JP, KR, US				
RW: BE, CH, DE, FR, GB, IT, NL				
AU 9930546	A1	20001023	AU 1999-30546	19990331
EP 1113023	A1	20010704	EP 1999-912076	19990331
R: BE, CH, DE, FR, GB, IT, LI, NL				

PRIORITY APPLN. INFO.: WO 1999-JP1684 A 19990331

AB The method comprises adding polysaccharides to water to swell them and treating the mixts. with a **homogenizer** at a pressure of 9.8-490 MPa (100-5000 kg/cm2) to disperse the swollen polysaccharides. **Homogeneous** polysaccharide **agglomerates** useful as coatings of carriers in drug delivery systems (no data) are stably and easily formed in a large quantity in a short time period.

IC ICM C08B037-00
ICS C08B015-00
CC 44-6 (Industrial Carbohydrates)
Section cross-reference(s): 63
ST polysaccharide cholesterol carbamate **agglomerate**; pullulan cholesterol carbamate; drug delivery carrier coating polysaccharide
IT **Agglomerates** (clustered mass)
Agglomeration
Medical goods
(method of forming **agglomerates** of hydrophobic group-contg. polysaccharides)
IT Polysaccharides, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(method of forming **agglomerates** of hydrophobic group-contg. polysaccharides)
IT 9036-88-8DP, Mannan, reaction products with N-(6-isocyanatohexyl)cholesterylcarbamate 9057-02-7DP, Pullulan, reaction products with N-(6-isocyanatohexyl)cholesterylcarbamate **136523-41-6DP**, reaction products with polysaccharides
RL: IMF (Industrial manufacture); PREP (Preparation)
(method of forming **agglomerates** of hydrophobic group-contg. polysaccharides)
IT **260250-21-3P**, N-(6-Isocyanatohexyl)stearylcarbamate
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(method of forming **agglomerates** of hydrophobic group-contg.

polysaccharides)

IT 57-88-5, Cholesterol, reactions 112-92-5, Stearyl alcohol 822-06-0, Hexamethylenediisocyanate 9036-88-8, Mannan 9057-02-7, Pullulan
RL: RCT (Reactant); RACT (Reactant or reagent)
(method of forming **agglomerates** of hydrophobic group-contg. polysaccharides)

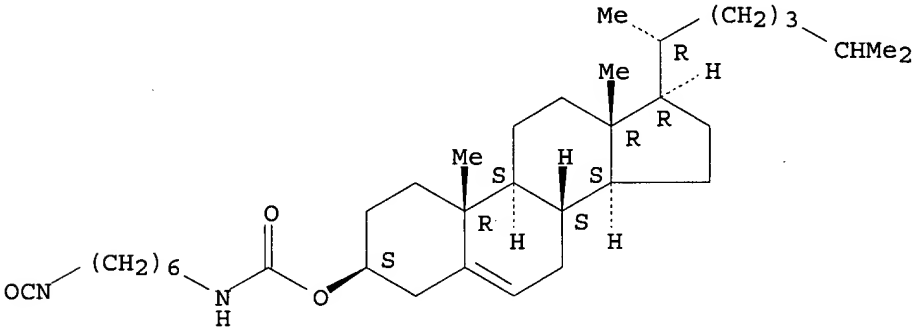
IT **136523-41-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(method of forming **agglomerates** of hydrophobic group-contg. polysaccharides)

IT **136523-41-6DP**, reaction products with polysaccharides
RL: IMF (Industrial manufacture); PREP (Preparation)
(method of forming **agglomerates** of hydrophobic group-contg. polysaccharides)

RN 136523-41-6 HCAPLUS

CN Cholest-5-en-3-ol (3.beta.)-, (6-isocyanatohexyl)carbamate (9CI) (CA INDEX NAME)

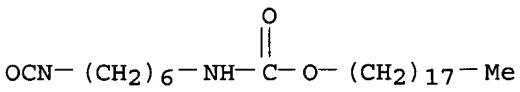
Absolute stereochemistry.



IT **260250-21-3P**, N-(6-Isocyanatohexyl)stearylcarbamate
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(method of forming **agglomerates** of hydrophobic group-contg. polysaccharides)

RN 260250-21-3 HCAPLUS

CN Carbamic acid, (6-isocyanatohexyl)-, octadecyl ester (9CI) (CA INDEX NAME)

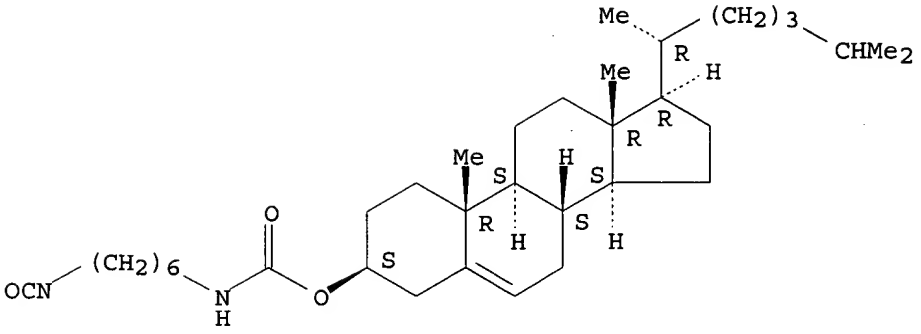


IT **136523-41-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(method of forming **agglomerates** of hydrophobic group-contg. polysaccharides)

RN 136523-41-6 HCAPLUS

CN Cholest-5-en-3-ol (3.beta.)-, (6-isocyanatohexyl)carbamate (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L32 ANSWER 3 OF 18 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:713091 HCAPLUS
DOCUMENT NUMBER: 133:298042
TITLE: Antistatic agents and antistatic method of laundry detergent and hair treatment agent
INVENTOR(S): Yano, Yoshihiro; Shimada, Kunio; Hayashi, Akio; Hosoya, Ryuzou; Sunamoto, Junzo; Akiyoshi, Kazunari
PATENT ASSIGNEE(S): Nippon Oil and Fats Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000282013	A2	20001010	JP 1999-92402	19990331

AB The agent is a polysaccharide deriv. contg. hydrophobic group. Thus, reaction of 0.96 mol hexamethylenediisocyanate and 0.065 mol cholesterol in toluene in the presence of 0.12 mol triethylamine for 6 h at 80.degree. gave an antistatic agent of N-(6-isocyanatohexyl)cholesteryl carbamate.

IC ICM C09K003-16
ICS H05F001-00

CC 46-4 (Surface Active Agents and Detergents)
Section cross-reference(s): 76

IT **136462-90-3P**, **Pullulan** carbamate ester with N-(6-isocyanatohexyl) cholesteryl carbamate **190280-37-6P**, **Mannan** carbamate ester with N-(6-isocyanatohexyl) cholesteryl carbamate 301297-12-1P, **Pullulan** ester with tris(trimethylsiloxy)silylpropyl carbamic acid
RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)
(antistatic agents and antistatic method of laundry detergent and hair treatment agent)

IT 57-88-5, Cholesterol, reactions 822-06-0 **9036-88-8**, **Mannan 9057-02-7**, **Pullulan** 25357-82-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(antistatic agents and antistatic method of laundry detergent and hair treatment agent)

IT **136462-90-3P**, **Pullulan** carbamate ester with N-(6-isocyanatohexyl) cholesteryl carbamate **190280-37-6P**, **Mannan** carbamate ester with N-(6-isocyanatohexyl) cholesteryl carbamate
RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)

(antistatic agents and antistatic method of laundry detergent and hair treatment agent)

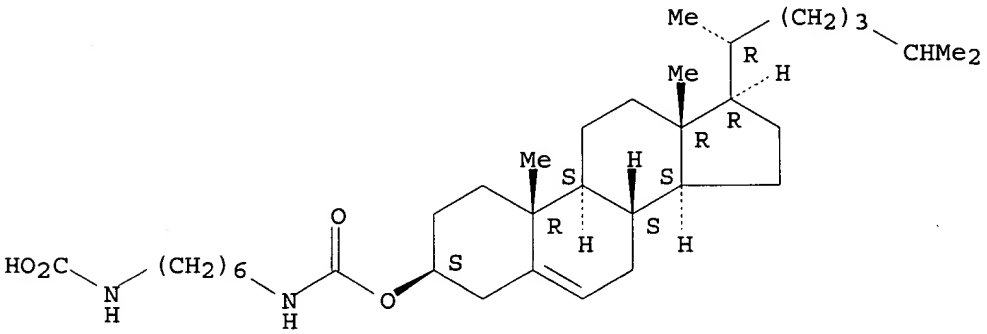
RN 136462-90-3 HCAPLUS

CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

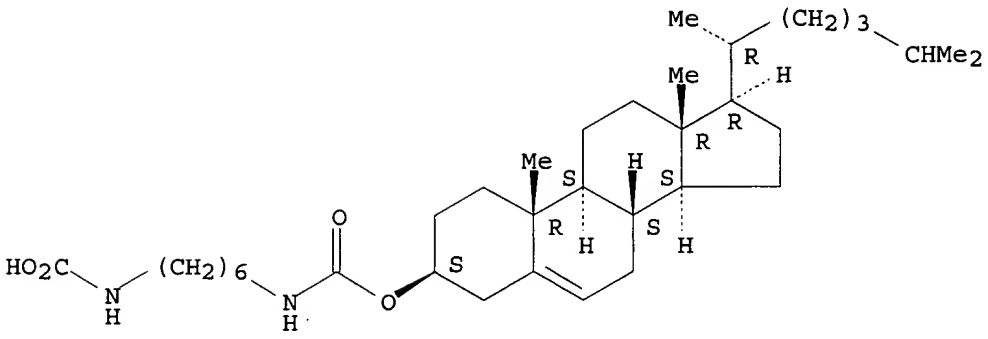
RN 190280-37-6 HCAPLUS

CN D-Mannan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9036-88-8
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **9036-88-8, Mannan 9057-02-7, Pullulan**
RL: RCT (Reactant); RACT (Reactant or reagent)
(antistatic agents and antistatic method of laundry detergent and hair treatment agent)
RN 9036-88-8 HCAPLUS
CN D-Mannan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9057-02-7 HCAPLUS
CN Pullulan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L32 ANSWER 4 OF 18 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:219290 HCAPLUS
DOCUMENT NUMBER: 133:109807
TITLE: Controlled Association of Amphiphilic Polymers in Water: Thermosensitive Nanoparticles Formed by Self-Assembly of Hydrophobically Modified Pullulans and Poly(N-isopropylacrylamides)
AUTHOR(S): Akiyoshi, Kazunari; Kang, Eui-Chul; Kurumada, Satoshi; Sunamoto, Junzo; Principi, Tania; Winnik, Francoise M.
CORPORATE SOURCE: Department of Synthetic Chemistry Biological Chemistry Graduate School of Engineering, Kyoto University, Kyoto, 606-8501, Japan
SOURCE: Macromolecules (2000), 33(9), 3244-3249
CODEN: MAMOBX; ISSN: 0024-9297
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Thermoresponsive hydrogel nanoparticles were prepd. by self-assembly of two different hydrophobically modified polymers, namely a cholesterol-bearing pullulan (CHP) and a copolymer of N-isopropylacrylamide (NIPAM) and N-[4-(1-pyrenyl)butyl]-N-n-octadecylacrylamide (PNIPAM-C18Py). The interactions between CHP and PNIPAM-C18Py were investigated by fluorescence spectroscopy, dynamic light scattering, and size exclusion chromatog. After ultrasonication of a

mixt. of CHP and PNIPAM-C18Py (5:1 by wt.) at 25.degree., monodisperse nanoparticles (Dh = 45 nm) were obtained, consisting of self-assembly of the two polymers assocd. via their hydrophobic moieties. Evidence from fluorescence and dynamic light scattering demonstrated that, above 32.degree., the lower crit. soln. temp. (LCST) of PNIPAM-C18Py, the colloidal mixed nanoparticles increase in diam. (from 47 to 160 nm), but no macroscopic aggregation could be detected. This phenomenon was thermoreversible: upon cooling the particles recovered their original diam.

CC 63-6 (Pharmaceuticals)

ST polyisopropylacrylamide cholesterol **pullulan** hydrogel thermosensitive nanoparticle

IT **136462-90-3** 283167-55-5
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(thermosensitive hydrogel nanoparticles formed by self-assembly of hydrophobically modified pullulans and poly(N-isopropylacrylamides))

IT **136462-90-3**
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(thermosensitive hydrogel nanoparticles formed by self-assembly of hydrophobically modified pullulans and poly(N-isopropylacrylamides))

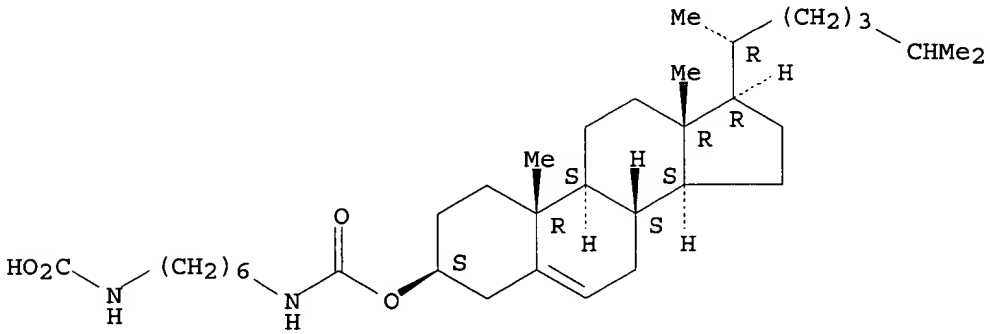
RN 136462-90-3 HCAPLUS

CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L32 ANSWER 5 OF 18 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:161336 HCAPLUS
DOCUMENT NUMBER: 132:196017
TITLE: High-purity polysaccharide containing hydrophobic groups and process for producing the same
INVENTOR(S): Sunamoto, Junzo; Akiyoshi, Kazunari; Hosotani, Ryuzo; Hayashi, Akio; Fukui, Hiroki
PATENT ASSIGNEE(S): Nof Corporation, Japan
SOURCE: PCT Int. Appl., 56 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000012564	A1	20000309	WO 1999-JP1683	19990331
W: AU, JP, KR, US				
RW: BE, CH, DE, FR, GB, IT, NL				
AU 9930545	A1	20000321	AU 1999-30545	19990331
EP 1026174	A1	20000809	EP 1999-912075	19990331
R: BE, CH, DE, FR, GB, IT, LI, NL				

PRIORITY APPLN. INFO.: JP 1998-244671 A 19980831
WO 1999-JP1683 W 19990331

AB The process comprises: a first-stage reaction in which a C12-50 hydroxylic hydrocarbon or a sterol is reacted with a diisocyanate to produce a monourethane having a remaining NCO group; a second-stage reaction in which the hydrophobic isocyanate compd. obtained in the first-stage reaction is reacted with a polysaccharide to produce a polysaccharide having, as hydrophobic groups, either C12-50 hydrocarbon groups or steryl groups; and purifying the product of the second-stage reaction with a ketone solvent. The hydrophobic polysaccharide is useful for coating on drug transportation system such as liposome microcapsules and microspheres (no data). Thus, heating cholesterol 0.065 with HMDI 0.96 in the presence of Et3N 0.12 mol in PhMe at 80.degree. for 6 h, and removing PhMe and excess HMDI in vacuo gave crude N-(6-isocyanatohexyl) cholesteryl carbamate (I) as a yellow oil which crystd. after 1 night at room temp. Washing the resulting yellow crystal with .apprx.1 L hexane for 4 times gave a white crystal contg. 8% a dicarbamate byproduct. Mixing a soln. of 40 g pullulan in 420 mL DMSO with 1.78 g the I dissolved in 31.6 g pyridine and heating at 90.degree. for 3 h, removing DMSO in vacuo, pptg. the resulting oil in 4 L acetone for overnight and decanting gave a pullulan deriv.

IC ICM C08B037-00
ICS C08B015-00
CC 44-5 (Industrial Carbohydrates)
ST polysaccharide steryl deriv manuf diisocyanate linking compd; **pullulan** hydrophobic modification HMDI monourethane deriv
IT **136462-90-3P**, **Pullulan** carbamate ester with N-(6-isocyanatohexyl) cholesteryl carbamate **190280-37-6P**, **Mannan** carbamate ester with N-(6-isocyanatohexyl) cholesteryl carbamate **260256-69-7P**, **Xyloglucan** carbamate ester with N-(6-isocyanatohexyl) cholesteryl carbamate **260256-70-0P**, **Amylose** carbamate ester with N-(6-isocyanatohexyl) cholesteryl carbamate **260256-71-1P**, Dextrin carbamate ester with N-(6-isocyanatohexyl) cholesteryl carbamate **260256-72-2P**, Hydroxyethyl **cellulose** carbamate ester with N-(6-isocyanatohexyl) cholesteryl carbamate **260256-74-4P**, **Pullulan** carbamate ester with N-(6-isocyanatohexyl)stearyl carbamate

RL: IMF (Industrial manufacture); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(manuf. of high-purity polysaccharide contg. hydrophobic groups)

IT 57-88-5, Cholesterol, reactions 112-92-5, 1-Octadecanol 822-06-0 9004-53-9, Dextrin **9004-62-0**, Hydroxyethyl **cellulose** **9005-82-7**, **Amylose** **9057-02-7**, **Pullulan** **37294-28-3**, **Xyloglucan**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant; manuf. of high-purity polysaccharide contg. hydrophobic groups)

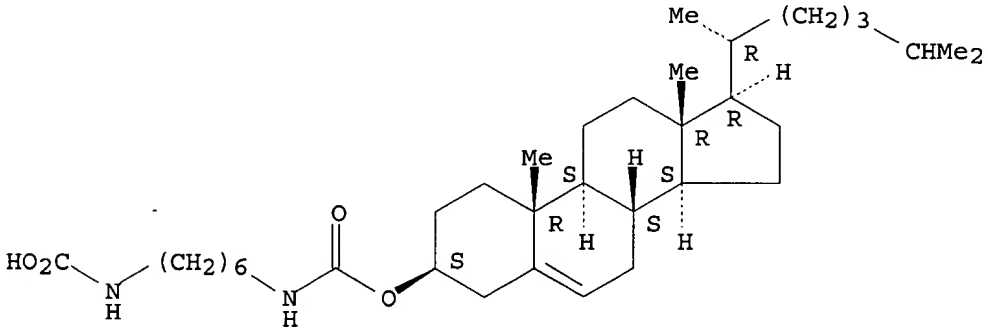
IT **136462-90-3P**, **Pullulan** carbamate ester with N-(6-isocyanatohexyl) cholesteryl carbamate **190280-37-6P**, **Mannan** carbamate ester with N-(6-isocyanatohexyl) cholesteryl carbamate **260256-69-7P**, **Xyloglucan** carbamate ester with N-(6-isocyanatohexyl) cholesteryl carbamate **260256-70-0P**, **Amylose** carbamate ester with N-(6-isocyanatohexyl) cholesteryl carbamate **260256-71-1P**, Dextrin carbamate ester with N-(6-isocyanatohexyl) cholesteryl carbamate **260256-72-2P**, Hydroxyethyl **cellulose** carbamate ester with N-(6-isocyanatohexyl) cholesteryl carbamate **260256-74-4P**, **Pullulan** carbamate ester with N-(6-isocyanatohexyl)stearyl carbamate
RL: IMF (Industrial manufacture); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(manuf. of high-purity polysaccharide contg. hydrophobic groups)

RN 136462-90-3 HCAPLUS
CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

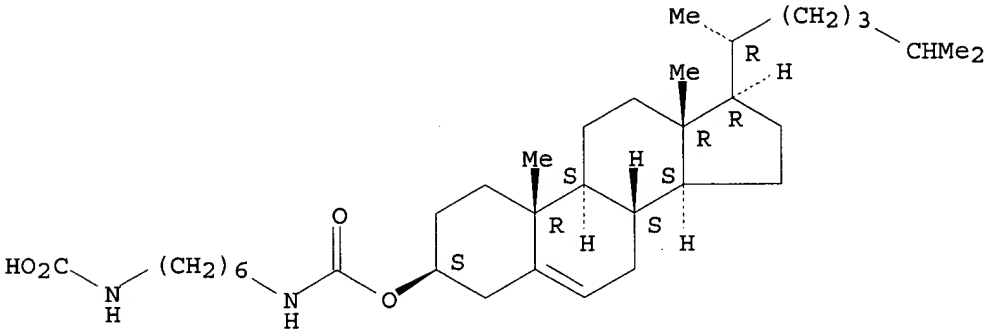
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 190280-37-6 HCAPLUS

CN D-Mannan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9036-88-8
CMF Unspecified
CCI PMS, MAN

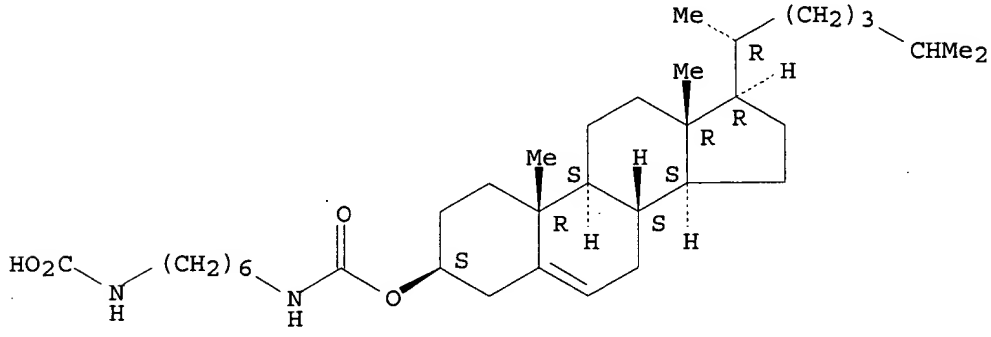
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 260256-69-7 HCAPLUS
CN Cholest-5-en-3-ol (3.beta.)-, [6-(carboxyamino)hexyl]carbamate, ester with glucoxylan (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

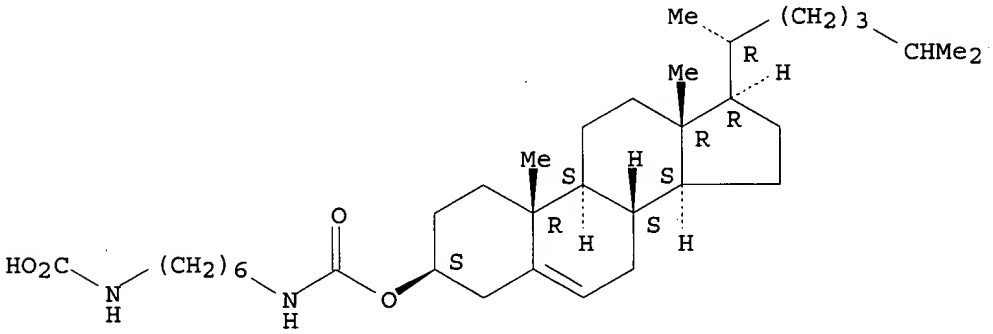
CRN 37294-28-3
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 260256-70-0 HCAPLUS
CN Cholest-5-en-3-ol (3.beta.)-, [6-(carboxyamino)hexyl]carbamate, ester with amylose (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

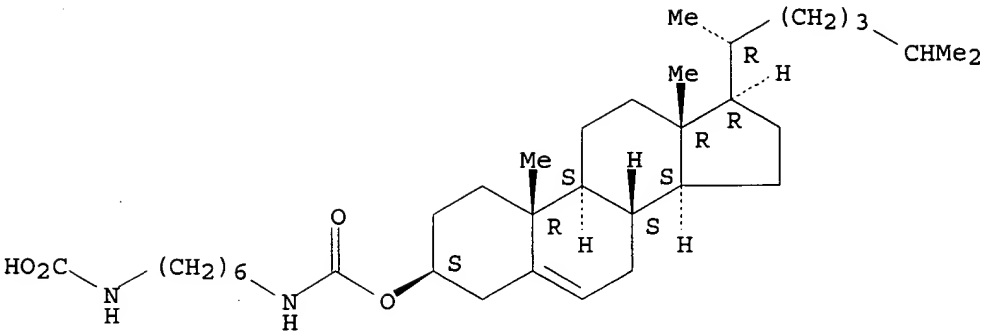
CRN 9005-82-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 260256-71-1 HCAPLUS
CN Cholest-5-en-3-ol (3.beta.)-, [6-(carboxyamino)hexyl]carbamate, ester with dextrin (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

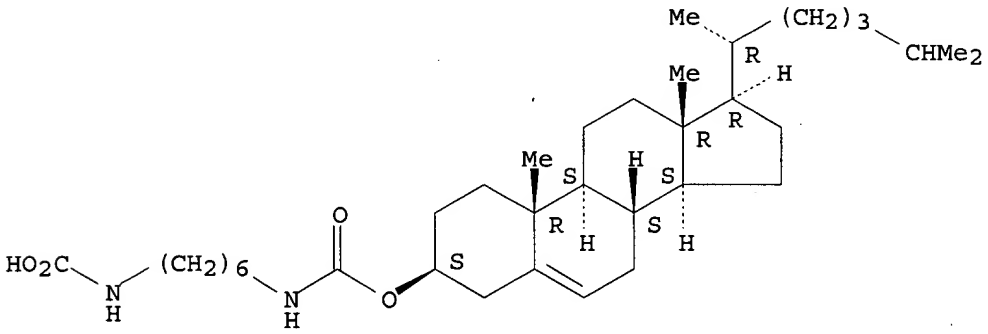
CRN 9004-53-9
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 260256-72-2 HCAPLUS
CN Cellulose, [6-[[[(3.beta.)-cholest-5-en-3-yloxy]carbonyl]amino]hexyl]carbamate, 2-hydroxyethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



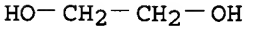
CM 2

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 3

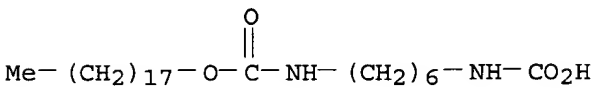
CRN 107-21-1
CMF C2 H6 O2



RN 260256-74-4 HCAPLUS
CN Pullulan, [6-[[(octadecyloxy)carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 260256-73-3
CMF C26 H52 N2 O4



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **9004-62-0**, Hydroxyethyl **cellulose 9005-82-7**, **Amylose 9057-02-7**, **Pullulan 37294-28-3**, **Xyloglucan**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant; manuf. of high-purity polysaccharide contg. hydrophobic groups)
RN 9004-62-0 HCAPLUS
CN Cellulose, 2-hydroxyethyl ether (8CI, 9CI) (CA INDEX NAME)

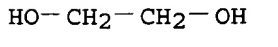
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 107-21-1
CMF C2 H6 O2



RN 9005-82-7 HCAPLUS
CN Amylose (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 9057-02-7 HCAPLUS
CN Pullulan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 37294-28-3 HCAPLUS
CN Glucoxylan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

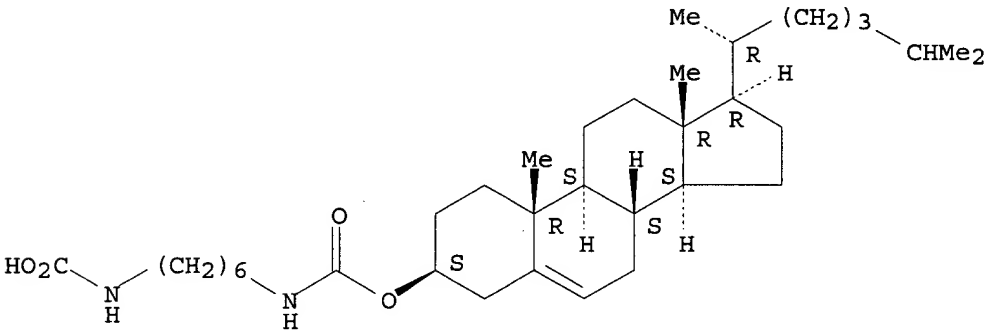
L32 ANSWER 6 OF 18 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:104476 HCAPLUS
DOCUMENT NUMBER: 133:17712
TITLE: Molecular recognition on giant vesicles: coating of phytyl phosphate vesicles with a polysaccharide bearing phytyl chains
AUTHOR(S): Ghosh, Sangita; Lee, Stephen J.; Nakatani, Yoichi; Ourisson, Guy; Ito, Kensuke; Akiyoshi, Kazunari; Sunamoto, Junzo
CORPORATE SOURCE: Cent. Neurochim., Lab. Chim. Org. Substances Nat., Associe CNRS, Universite Louis Pasteur, Strasbourg, 67084, Fr.
SOURCE: Chemical Communications (Cambridge) (2000), (4), 267-268
CODEN: CHCOFS; ISSN: 1359-7345
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The mol. recognition between phytyl phosphate giant vesicles and a polysaccharide (pullulan) bearing phytyl or cholesteryl groups and a fluorescent tag was investigated; the pullulan bearing phytyl chains did coat the surface of the vesicles, in contrast with the pullulan bearing cholesteryl groups.
CC 33-5 (Carbohydrates)
Section cross-reference(s): 32, 42
ST mol recognition polysaccharide phytyl phosphate vesicle coating; phytyl phosphate vesicle coating polysaccharide **pullulan** fluorescent cholesteryl
IT **272109-62-3P**
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(coating of phytyl phosphate vesicles with a polysaccharide bearing phytyl chains)
IT 150-86-7, Phytol 822-06-0 **272109-61-2D**, reaction products with morpholinyltriazine fluorescamine deriv.
RL: RCT (Reactant); RACT (Reactant or reagent)
(coating of phytyl phosphate vesicles with a polysaccharide bearing phytyl chains)
IT 270910-54-8P **272109-61-2P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(coating of phytyl phosphate vesicles with a polysaccharide bearing phytyl chains)
IT **272109-62-3P**
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(coating of phytyl phosphate vesicles with a polysaccharide bearing

phytyl chains)
RN 272109-62-3 HCAPLUS
CN Pullulan, [6-[[[(3.beta.)-cholest-5-en-3-yloxy]carbonyl]amino]hexyl]carbamate, ether with 3',6'-dihydroxy-5(or 6)-isothiocyanatospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one (9CI) (CA INDEX NAME)

CM 1

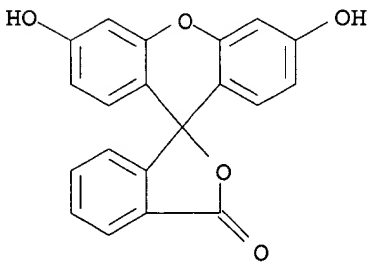
CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

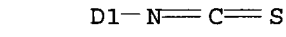
Absolute stereochemistry.



CM 2

CRN 27072-45-3
CMF C21 H11 N O5 S
CCI IDS
CDES *





CM 3

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

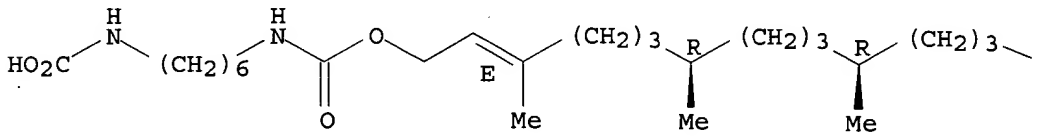
IT **272109-61-2D**, reaction products with morpholinyltriazine fluorescamine deriv.
RL: RCT (Reactant); RACT (Reactant or reagent)
(coating of phytyl phosphate vesicles with a polysaccharide bearing phytyl chains)
RN 272109-61-2 HCAPLUS
CN Pullulan, [6-[[[[(2E,7R,11R)-3,7,11,15-tetramethyl-2-hexadecenyl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 272109-60-1
CMF C28 H54 N2 O4

Absolute stereochemistry.
Double bond geometry as shown.

PAGE 1-A



PAGE 1-B

CHMe2

CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(coating of phytyl phosphate vesicles with a polysaccharide bearing phytyl chains
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L32 ANSWER 7 OF 18 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:81123 HCAPLUS
DOCUMENT NUMBER: 132:222998
TITLE: Synthesis and solution properties of cholesterol end-capped poly(ethylene glycol)
AUTHOR(S): Yao, Ning; Jamieson, Alex M.
CORPORATE SOURCE: Department of Macromolecular Science, Case Western Reserve University, Cleveland, OH, 44106-7202, USA
SOURCE: Polymer (2000), 41(8), 2925-2930
CODEN: POLMAG; ISSN: 0032-3861
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal

LANGUAGE: English

AB Cholesterol end-capped polyethylene glycol (Ch2PEG) was synthesized by coupling cholesterol at each end of PEG (mol. wt. = 4000, 10,000, 20,000, and 35,000 g/mol) with hexamethylene diisocyanate. Unlike hydrophobically modified PEGs, which are end-capped with flexible hydrocarbons or fluorocarbons, Ch2PEGs are not sol. in water, although they do swell significantly, and the swelling ratio increases with mol. wt. Anal. of the swelling ratios via the Flory-Rehner equation indicates that, as PEG mol. wt. increases, the Flory-Huggins interaction parameter decreases slightly from 0.534 to 0.495 and becomes const. within exptl. error when the PEG mol. wt. reaches 10,000. Addn. of small amts. of a co-solvent such as 1-propanol converts this intractable opaque material to a completely **homogeneous**, optically transparent, highly elastic fluid whose viscoelastic properties are those of a transient network with relaxation times in the range from 0.1 to 10 s, depending on co-solvent content and temp.

CC 35-8 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 32, 75

IT **136523-41-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; prepn. and viscoelasticity of cholesterol-terminated polyethylene glycol)

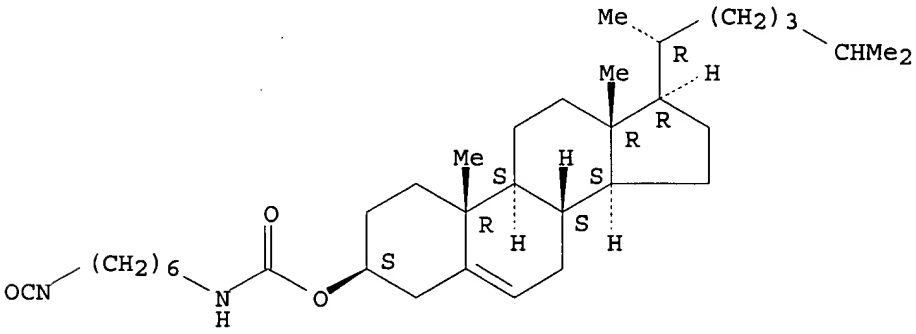
IT **261172-78-5P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and viscoelasticity of cholesterol-terminated polyethylene glycol)

IT **136523-41-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; prepn. and viscoelasticity of cholesterol-terminated polyethylene glycol)

RN 136523-41-6 HCAPLUS

CN Cholest-5-en-3-ol (3.beta.)-, (6-isocyanatohexyl)carbamate (9CI) (CA INDEX NAME)

Absolute stereochemistry.



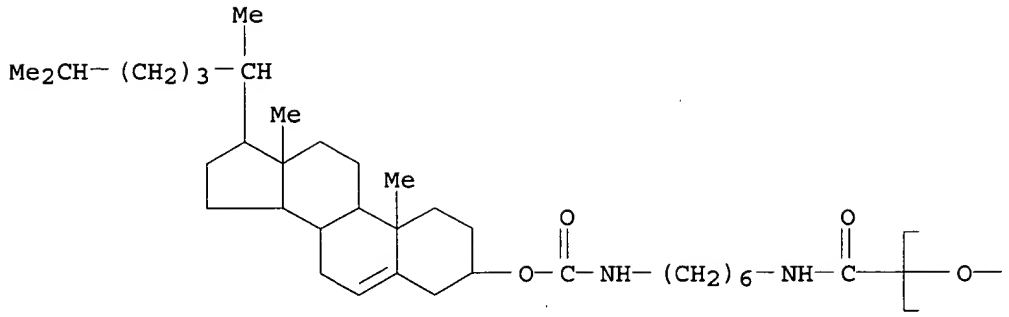
IT **261172-78-5P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and viscoelasticity of cholesterol-terminated polyethylene glycol)

RN 261172-78-5 HCAPLUS

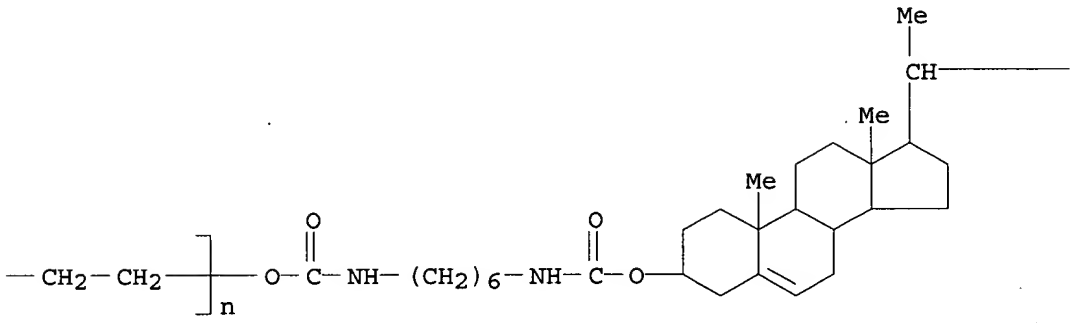
CN Poly(oxy-1,2-ethanediyl), .alpha.-[[[6-[[[(3.beta.)-cholest-5-en-3-yloxy]carbonyl]amino]hexyl]amino]carbonyl]-.omega.-[[[[6-[[[(3.beta.)-cholest-5-en-3-yloxy]carbonyl]amino]hexyl]amino]carbonyl]oxy]- (9CI) (CA

INDEX NAME)

PAGE 1-A



PAGE 1-B



PAGE 1-C

— $(CH_2)_3$ — $CHMe_2$

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L32 ANSWER 8 OF 18 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:37623 HCAPLUS
DOCUMENT NUMBER: 132:339194
TITLE: Utility of liposomes coated with polysaccharide bearing 1-aminolactose as targeting chemotherapy for AH66 hepatoma cells
AUTHOR(S): Yamamoto, Masayuki; Ichinose, Katsuro; Ishii, Nobuko; Khoji, Toshihiko; Akiyoshi, Kazunari; Moriguchi, Nobuhiro; Sunamoto, Junzo; Kanematsu, Takashi
CORPORATE SOURCE: Department of Surgery II, Nagasaki University School of Medicine, Nagasaki, 852-8501, Japan
SOURCE: Oncology Reports (2000), 7(1), 107-111
CODEN: OCRPEW; ISSN: 1021-335X

PUBLISHER: Oncology Reports
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The cell recognition element is very important for drug delivery systems. We synthesized cholesteryl pullulan (CHP) bearing 1-aminolactose (1-AL) and introduced a saccharide, cholesteryl pullulan bearing 1-aminolactose (1-AL/CHP), to an outer layer of the conventional liposome as a cell recognition element. Lectin recognized the .beta.-galactose by aggregation of 1-AL/CHP coated liposome (1-AL/CHP liposome). The uptake of this liposome to AH66 rat hepatoma cells was greater than in liposomes without 1-aminolactose in vitro. Furthermore, 1-AL/CHP liposomal adriamycin showed a stronger antitumor effect in comparison with other types of liposomal adriamycin in vitro. When in vivo tumor-targeting efficacy was investigated in AH66 tumor transplanted mice using 3H-liposome, the tumor/serum radioactivity ratio in mice injected with 1-AL/CHP liposome was higher than that of mice injected with other liposomes. These observations suggest that 1-AL is effective as a cell recognition element. As a result, 1-AL/CHP liposome is considered to be a good carrier of anticancer drugs for the active targeting of tumor cells.

CC 63-6 (Pharmaceuticals)

IT 91926-84-0D, reaction products with cholesteryl **pullulan** **136462-90-3**
RL: RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(utility of liposomes coated with polysaccharide bearing 1-aminolactose as targeting chemotherapy for AH66 hepatoma cells)

IT **136462-90-3DP**, reaction products with 1-aminolactose
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(utility of liposomes coated with polysaccharide bearing 1-aminolactose as targeting chemotherapy for AH66 hepatoma cells)

IT **136462-90-3**
RL: RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(utility of liposomes coated with polysaccharide bearing 1-aminolactose as targeting chemotherapy for AH66 hepatoma cells)

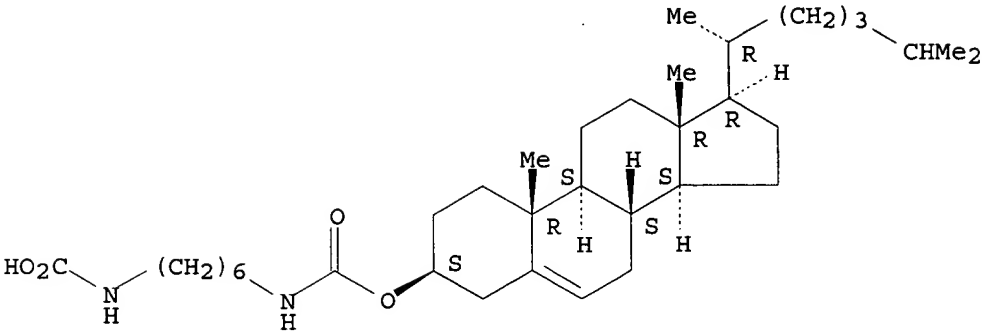
RN 136462-90-3 HCAPLUS

CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **136462-90-3DP**, reaction products with 1-aminolactose
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(utility of liposomes coated with polysaccharide bearing 1-aminolactose as targeting chemotherapy for AH66 hepatoma cells)

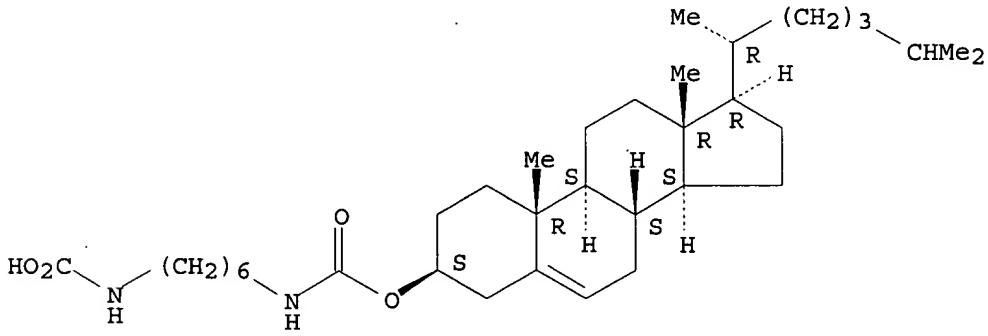
RN 136462-90-3 HCAPLUS

CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L32 ANSWER 9 OF 18 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:414933 HCAPLUS
DOCUMENT NUMBER: 131:248104
TITLE: Cell specificity of macromolecular assembly of cholesteryl and galactoside groups-conjugated **pullulan**
AUTHOR(S): Taniguchi, Ikuo; Akiyoshi, Kazunari; Sunamoto, Junzo; Suda, Yasuo; Yamamoto, Masayuki; Ichinose, Katsuro
CORPORATE SOURCE: Department of Synthetic Chemistry and Biological Chemistry, Graduate School of Engineering, Kyoto University, Kyoto, 606-8501, Japan
SOURCE: Journal of Bioactive and Compatible Polymers (1999), 14(3), 195-212
CODEN: JBCPEV; ISSN: 0883-9115
PUBLISHER: Technomic Publishing Co., Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Galactose or lactose groups were conjugated to cholesterol-bearing pullulan (CHP). The CHP derivs. obtained formed monodisperse nanoparticles upon self-aggregation in water. Nanoparticles of galactoside-conjugated CHP self-aggregates were specifically internalized by rat hepatocytes and HepG2 cells. Galactoside-bearing CHP-coated liposome or oil droplet of O/W-emulsion was also taken up by HepG2 cells. Tissue distribution of the nanoparticle CHP self-aggregates changed dramatically with chem. conjugation of the galactose moiety. Galactoside-bearing nanoparticles were specifically accumulated in the liver.

CC 63-5 (Pharmaceuticals)
Section cross-reference(s): 1

ST cholesterol **pullulan** galactoside conjugate drug carrier; macromol CHP deriv conjugate galactose lactose; nanoparticle selfassocn liposome delivery drug bioavailability

IT Drug delivery systems
(carriers; macromol. assembly of cholesteryl and galactoside groups-conjugated **pullulan**)

IT Intestine
(colon; macromol. assembly of cholesteryl and galactoside groups-conjugated **pullulan**)

IT Macromolecular compounds
Polysaccharides, biological studies
RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(conjugates; macromol. assembly of cholesteryl and galactoside groups-conjugated **pullulan**)

IT Intestine
(duodenum; macromol. assembly of cholesteryl and galactoside groups-conjugated **pullulan**)

IT Liver
(hepatocyte; macromol. assembly of cholesteryl and galactoside groups-conjugated **pullulan**)

IT Biological transport
(internalization; macromol. assembly of cholesteryl and galactoside groups-conjugated **pullulan**)

IT Drug delivery systems
(liposomes; macromol. assembly of cholesteryl and galactoside

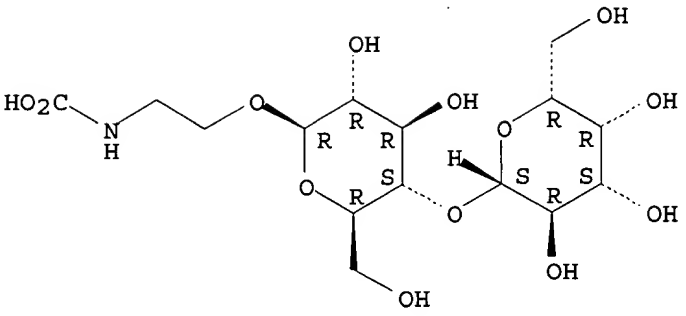
groups-conjugated **pullulan**)
IT Bone marrow
Drug bioavailability
Heart
Kidney
Liver
Lung
Muscle
Self-association
Spleen
Stomach
(macromol. assembly of cholesteryl and galactoside groups-conjugated **pullulan**)
IT Drug delivery systems
(nanoparticles; macromol. assembly of cholesteryl and galactoside groups-conjugated **pullulan**)
IT Emulsions
(oil-in-water; macromol. assembly of cholesteryl and galactoside groups-conjugated **pullulan**)
IT Aggregation
(self; macromol. assembly of cholesteryl and galactoside groups-conjugated **pullulan**)
IT 57-88-5DP, Cholesterol, **pullulan**-contg derivs 59-23-4DP, Galactose, conjugate with cholesterol-bearing **pullulan**
63-42-3DP, Lactose, conjugate with cholesterol-bearing **pullulan**
9057-02-7DP, **Pullulan**, cholesterol-contg derivs
182072-26-0P 183181-88-6P
RL: BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(macromol. assembly of cholesteryl and galactoside groups-conjugated **pullulan**)
IT **9057-02-7DP**, **Pullulan**, cholesterol-contg derivs
182072-26-0P 183181-88-6P
RL: BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(macromol. assembly of cholesteryl and galactoside groups-conjugated **pullulan**)
RN 9057-02-7 HCAPLUS
CN Pullulan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 182072-26-0 HCAPLUS
CN Pullulan, [6-[[[(3.beta.)-cholest-5-en-3-yloxy]carbonyl]amino]hexyl]carbamate [2-[(4-O-.beta.-D-galactopyranosyl-.beta.-D-glucopyranosyl)oxy]ethyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 181576-72-7
CMF C15 H27 N O13
CDES 5:B-D-GALACTO,B-D-GLUCO

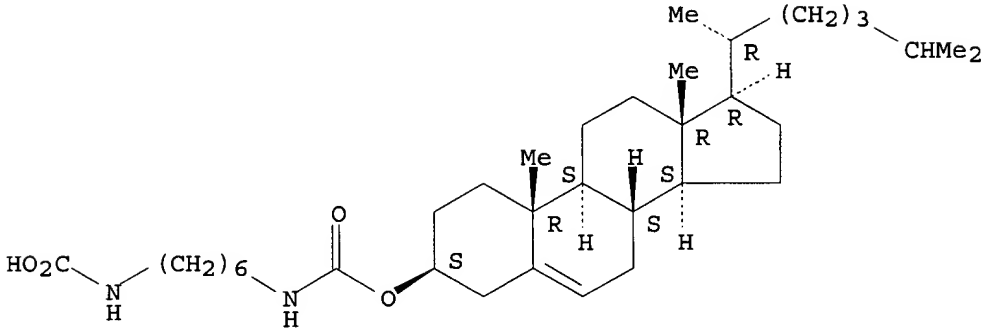
Absolute stereochemistry.



CM 2

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



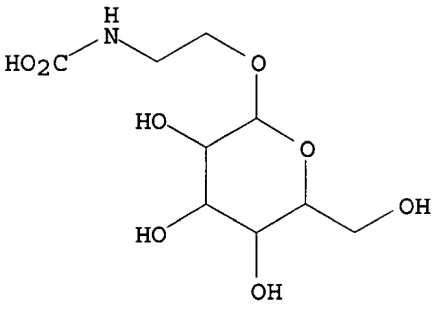
CM 3

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 183181-88-6 HCAPLUS
CN Pullulan, [6-[[[(3.beta.)-cholest-5-en-3-yloxy]carbonyl]amino]hexyl]carbamate [2-(.beta.-D-galactopyranosyloxy)ethyl]carbamate (9CI) (CA INDEX NAME)

CM 1

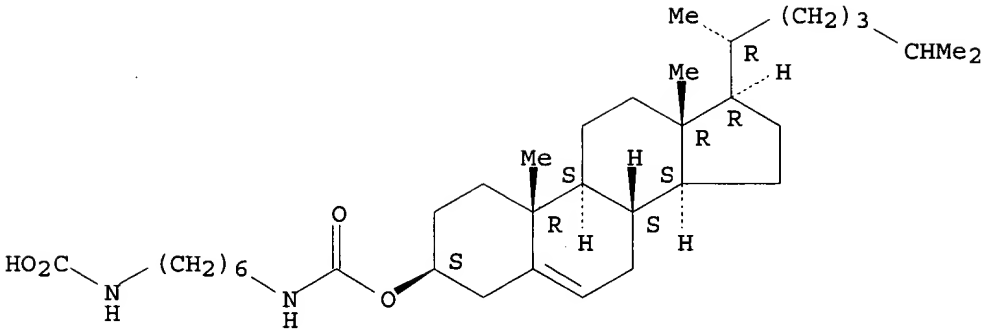
CRN 183071-65-0
CMF C9 H17 N O8
CDES 5:B-D-GALACTO



CM 2

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 3

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L32 ANSWER 10 OF 18 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:47819 HCAPLUS
DOCUMENT NUMBER: 130:308176
TITLE: Gelation of cholesterol-bearing **pullulan** by surfactant and its rheology
AUTHOR(S): Deguchi, Shigeru; Kuroda, Kenichi; Akiyoshi, Kazunari; Lindman, Bjorn; Sunamoto, Junzo
CORPORATE SOURCE: Graduate School of Engineering, Department of Synthetic Chemistry and Biological Chemistry, Kyoto University, Yoshida Hommachi, Sakyo-ku, Kyoto, 606-8501, Japan
SOURCE: Colloids Surf., A (1999), 147(1-2), 203-211

CODEN: CPEAEH; ISSN: 0927-7757
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Gelation of cholesterol-bearing pullulan (CHP) with SDS in water was studied by rheol. measurements. The apparent viscosity of the CHP (2% (wt./wt.))/SDS mixt. increased with an increase in the SDS concn. up to .apprxeq.1% and then decreased after a max. In the presence of large amts. of SDS, the CHP self-aggregate certainly dissocd. With 3% (wt./wt.) CHP, a macroscopic gel was formed by the addn. of SDS above 0.5% (wt./wt.). At higher concns. of SDS (above 4.5% (wt./wt.)), the gel changed to a sol. The mechanism of the gelation and the transition to the sol is related to the formation of mixed aggregates between the cholesteryl groups of CHP and SDS. Due to the strong assocn. of the cholesteryl groups, large amts. of SDS were required to achieve the complete solubilization of cholesteryl groups. Oscillatory shear measurements were carried out for the gel of the CHP/SDS mixt. In the low frequency region (.omega.<0.1 Hz), G'' (loss modulus) showed a max., while G' (storage modulus) reached a plateau with an intersection of the G'' curve. This is a trend typical of a Maxwellian fluid. An extremely long relaxation time (.apprxeq.20 s) was obsd. for the CHP/SDS gel at relatively low SDS concns. Such a long relaxation time would be ascribed to the strong assocn. of the cholesteryl groups of CHP.

CC 6-4 (General Biochemistry)
Section cross-reference(s): 33

ST gelation cholesterol **pullulan** surfactant rheol

IT Mechanical loss
Mechanical relaxation
Self-association
Shear
(gelation of cholesterol-bearing **pullulan** by surfactant and rheol.)

IT 151-21-3, Sodium dodecyl sulfate, processes **136462-90-3**
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(gelation of cholesterol-bearing **pullulan** by surfactant and rheol.)

IT **136462-90-3**
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(gelation of cholesterol-bearing **pullulan** by surfactant and rheol.)

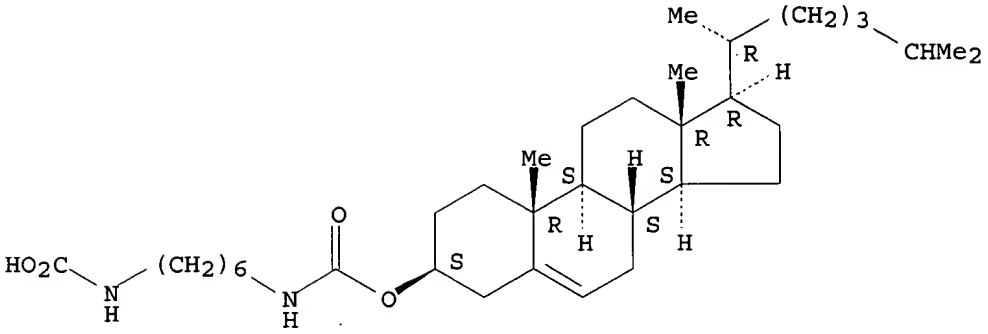
RN 136462-90-3 HCAPLUS

CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L32 ANSWER 11 OF 18 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:13407 HCAPLUS
DOCUMENT NUMBER: 130:184019
TITLE: Gelation of hydrophobized **pullulan**
AUTHOR(S): Akiyoshi, Kazunari; Kuroda, Kenichi; Sunamoto, Junzo
CORPORATE SOURCE: Graduate School of Engineering, Kyoto University, Yosida Honnmachi, Sakyo-ku, Kyoto, 606-8501, Japan
SOURCE: Kobunshi Ronbunshu (1998), 55(12), 780-785
CODEN: KBRBA3; ISSN: 0386-2186
PUBLISHER: Kobunshi Gakkai
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

AB Gelation of hydrophobic polysaccharides such as cholesterol-bearing pullulan (CHP) and long alkyl chain-bearing pullulan (C12P, C16P, C20P) was investigated. In dil. aq. soln., the hydrophobized polysaccharides intermolecularly self-aggregate to form nanoparticles. The size and the d. of the nanoparticles are controlled by changing the chem. structure and the substitution degree of the hydrophobic groups. CHP and C16P formed gels at the concn. above 3.5 wt% and 5.5 wt%, resp. TEM image showed that CHP provides a gel in which the CHP nanoparticles link together, while C16P gel was fibrous. Structure and rheol. behavior of the gels were dependent on the structure of the hydrophobic group conjugated to the polysaccharide. The addn. of a surfactant such as SDS induced gelation of CHP and C16P. The oscillatory shear measurements of the gels showed trends of a typical Maxwellian fluid. The self-aggregate of CHP dissocd. by complexation with .beta.-cyclodextrin (.beta.-CD) to yield a dis-aggregated CHP-CD complex, in which the cholesteryl group was a suitable guest for .beta.-CD. The monodisperse nanoparticles were regenerated by addn. of 1-adamantancarboxylic acid, which is a better guest mol. for .beta.-CD than cholesterol.

CC 44-6 (Industrial Carbohydrates)
ST gelation cholesterol alkyl bearing **pullulan**
IT Gelation
Mechanical loss

Nanoparticles
Self-association
(gelation of hydrophobic **pullulan**)

IT **136462-90-3 190280-38-7 220666-47-7**
220666-49-9
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(gelation of hydrophobic **pullulan**)

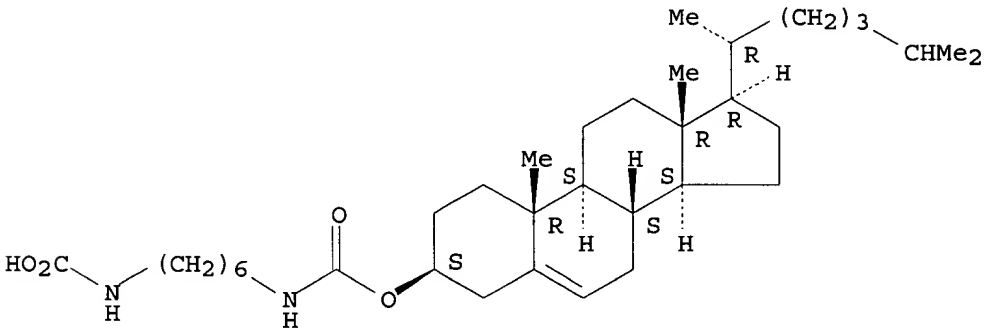
IT **136462-90-3 190280-38-7 220666-47-7**
220666-49-9
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(gelation of hydrophobic **pullulan**)

RN 136462-90-3 HCAPLUS
CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



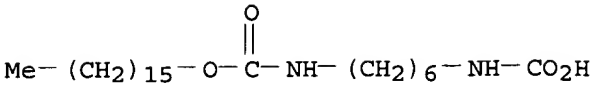
CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 190280-38-7 HCAPLUS
CN Pullulan, [6-[[(hexadecyloxy)carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 190196-55-5
CMF C24 H48 N2 O4



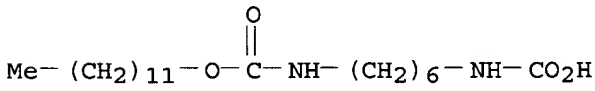
CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 220666-47-7 HCAPLUS
CN Pullulan, [6-[[(dodecyloxy)carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 220666-46-6
CMF C20 H40 N2 O4



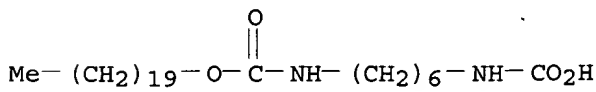
CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 220666-49-9 HCAPLUS
CN Pullulan, [6-[[(eicosyloxy)carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 220666-48-8
CMF C28 H56 N2 O4



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L32 ANSWER 12 OF 18 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1997:617434 HCAPLUS
DOCUMENT NUMBER: 127:298726
TITLE: Stable chromophore conjugates
INVENTOR(S): Kato, Yusuke; Sunamoto, Junzo
PATENT ASSIGNEE(S): Foundation for Scientific Technology Promotion, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09241180	A2	19970916	JP 1996-51845	19960308

AB Neocarzinostatin chromophore A (I) is isolated from unstable neocarzinostatin [contg. chromophore and apoprotein] and made into conjugates with a hydrophobic polysaccharide [e.g. cholesterol group-contg. pullulan] to give stable I-hydrophobic polysaccharide conjugates for therapeutic use.

IC ICM A61K047-36
ICS A61K031-715; C07H017-04

CC 63-5 (Pharmaceuticals)

IT **181724-74-3DP**, conjugates with chromophore
RL: PNU (Preparation, unclassified); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(repeating unit, stable chromophore conjugates for therapeutic use)

IT 9014-02-2, Neocarzinostatin **9057-02-7D**, **Pullulan**, cholesterol group-contg., conjugates with chromophore
RL: RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(stable chromophore conjugates for therapeutic use)

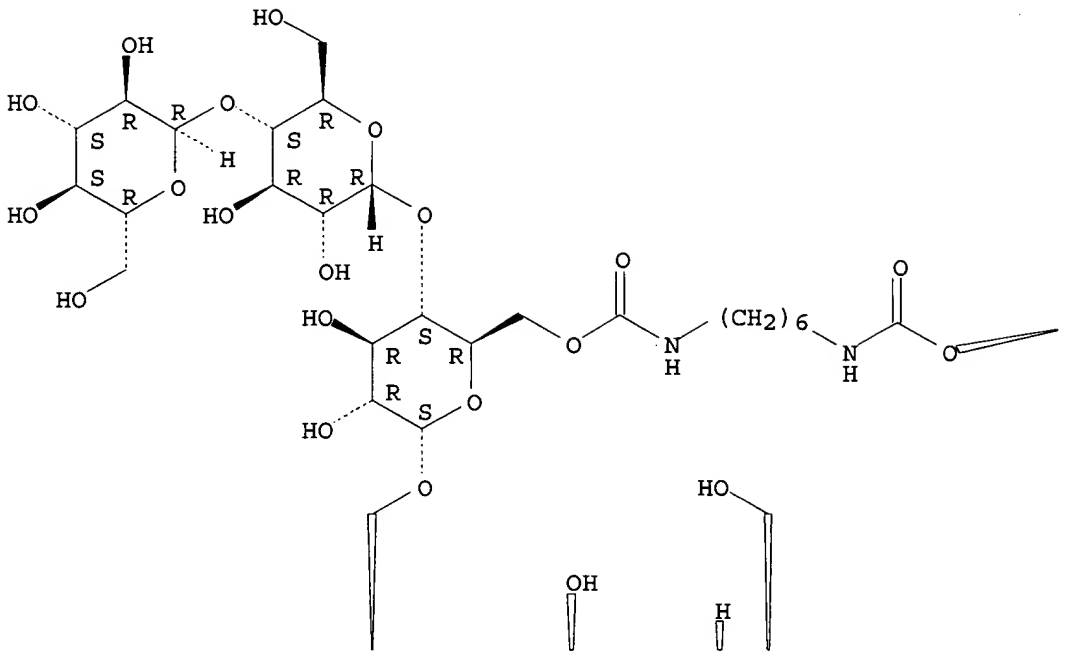
IT **181724-74-3DP**, conjugates with chromophore
RL: PNU (Preparation, unclassified); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(repeating unit, stable chromophore conjugates for therapeutic use)

RN 181724-74-3 HCAPLUS

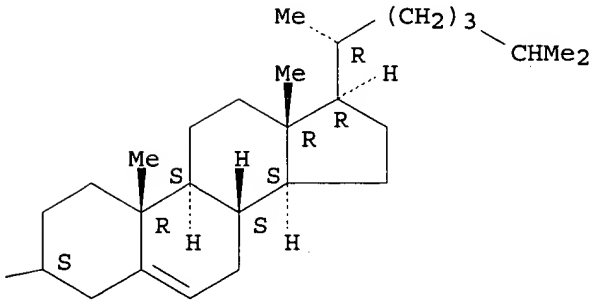
CN .alpha.-D-Glucopyranose, O-.alpha.-D-glucopyranosyl-(1.fwdarw.4)-O-.alpha.-D-glucopyranosyl-(1.fwdarw.4)-O-6-O-[[[6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]amino]carbonyl]-.alpha.-D-glucopyranosyl-(1.fwdarw.6)-O-.alpha.-D-glucopyranosyl-(1.fwdarw.4)-O-.alpha.-D-glucopyranosyl-(1.fwdarw.4)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

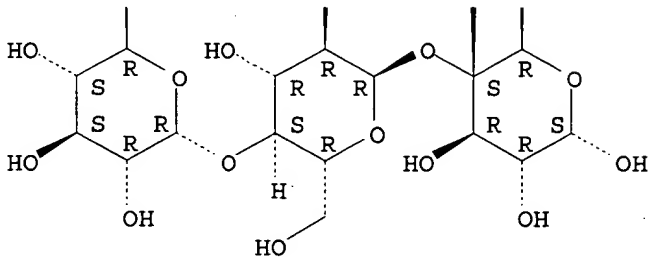
PAGE 1-A



PAGE 1-B



PAGE 2-A



IT **9057-02-7D**, **Pullulan**, cholesterol group-contg., conjugates with chromophore
RL: RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(stable chromophore conjugates for therapeutic use)
RN 9057-02-7 HCAPLUS
CN Pullulan (9CI) (CA INDEX NAME)

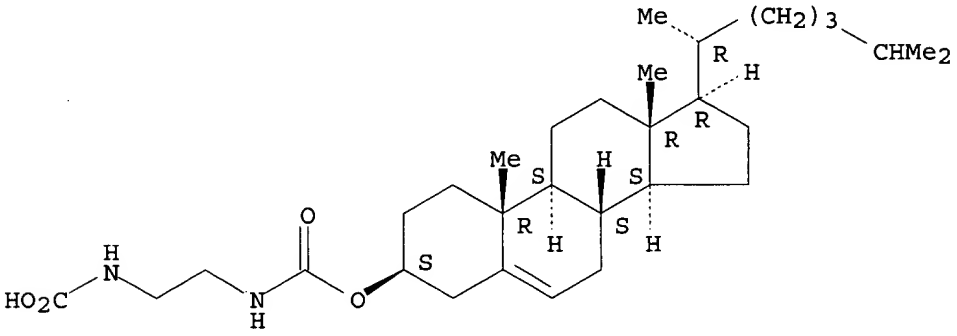
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L32 ANSWER 13 OF 18 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1997:614661 HCAPLUS
DOCUMENT NUMBER: 127:248312
TITLE: Adsorption of a Hydrophobically Modified Polysaccharide at the Air-Water Interface: Kinetics and Structure
AUTHOR(S): Deme, Bruno; Lee, Lay-Theng
CORPORATE SOURCE: Service de Chimie Moleculaire, C.E. Saclay, Gif sur Yvette, 91191, Fr.
SOURCE: J. Phys. Chem. B (1997), 101(41), 8250-8258
CODEN: JPCBFK; ISSN: 1089-5647
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We have used specular neutron reflectivity to study adsorbed layers of a modified polysaccharide bearing lateral cholesterol anchors (cholesteryl-pullulan, CHP) at the air-water interface. In this system, the otherwise non surface active polysaccharide is attached, at several points along the backbone, to the surface by the hydrophobic cholesterol groups. The properties of these adsorbed polymer layers have been studied for different degrees of cholesterol substitution varying from 0.6 to 1.4 mol % and for different bulk concns. Using a parabolic profile to describe the adsorbed layer, it is found that the thickness of the layer decreases with surface concn. These results are in contrast to those reported for end-attached tethered polymer layers. We attribute this behavior to the associative properties of the polymer as the interacting cholesterol groups are increased in the layer. Furthermore, the amt. of polymer adsorbed decreases with the degree of cholesterol substitution. Surface tension data show that very long equilibration times are required for the formation of the polymer layers at the surface. However, the neutron reflectivity data show that even though the concn. profile changes over time, the amt. of polymer adsorbed remains const. These results suggest that the slow kinetics obsd. in surface tension measurements are due to structural rearrangements in the adsorbed layer.
CC 33-5 (Carbohydrates)
Section cross-reference(s): 22, 32
ST structure property adsorption polysaccharide tethered cholesterol; surface tension polysaccharide tethered cholesterol; polysaccharide tethered cholesterol adsorption thickness; air water interface adsorption cholesteryl **pullulan**; hydrophobic cholesteryl **pullulan** adsorption kinetics
IT 57-88-5, Cholesterol, properties **9057-02-7D**, **Pullulan**, cholesteryl bound **195520-70-8D**, **pullulan** bound
RL: PRP (Properties)
(adsorption and surface tension of a hydrophobically modified polysaccharide at the air-water interface)
IT **9057-02-7D**, **Pullulan**, cholesteryl bound **195520-70-8D**, **pullulan** bound
RL: PRP (Properties)
(adsorption and surface tension of a hydrophobically modified

polysaccharide at the air-water interface)
RN 9057-02-7 HCAPLUS
CN Pullulan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 195520-70-8 HCAPLUS
CN Cholest-5-en-3-ol (3.beta.)-, [2-(carboxyamino)ethyl]carbamate (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L32 ANSWER 14 OF 18 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1997:306396 HCAPLUS
DOCUMENT NUMBER: 127:9040
TITLE: Surface coating of liposomes with hydrophobized polysaccharides
AUTHOR(S): Kang, Eui-Chul; Akiyoshi, Kazunari; Sunamoto, Junzo
CORPORATE SOURCE: Department of Synthetic Chemistry & Biological Chemistry, Graduate School of Engineering, Kyoto University, Kyoto, 606-01, Japan
SOURCE: J. Bioact. Compat. Polym. (1997), 12(1), qq14-26
CODEN: JBCPEV; ISSN: 0883-9115
PUBLISHER: Technomic
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Coating the outermost surface of a liposomal membrane with several different hydrophobized polysaccharides was investigated by fluorescence depolarization, gel chromatog., and dynamic light scattering methods. The binding of cholesterol-bearing pullulan to the liposomal surface was biphasic. The first process was finished within minutes while the subsequent slow stages took over several hours. The binding isotherms followed Langmuir-type adsorption. The binding const. (K) increased with increases in the substitution degree of the cholesteryl moiety and the mol. wt. of the pullulan derivs. used, while the max. amt. of the polysaccharide coating (qs) was almost the same. The apparent liposome size increased by 20-30 nm upon coating. Chem. structure of the parent polysaccharide had only a slight effect on the binding const., while the structures of the hydrophobic moiety had a significant effect on the coating behavior of the liposomes. In the case of dodecyl diglyceryl group-bearing pullulan, both K and qs were smaller than those of other cholesterol-bearing polysaccharides. The addn. of hexadecyl-bearing pullulan to the liposome induced aggregation of the liposomes. The cholesteryl moiety is an excellent hydrophobic anchor for polysaccharide coating liposomal surfaces compared with simple monoalkyl or dialkyl chains.

CC 63-5 (Pharmaceuticals)
IT 2644-64-6, Dipalmitoylphosphatidylcholine **9004-54-0**, **Dextran**, biological studies **9036-88-8**, **Mannan** **9057-02-7**, **Pullulan 9057-02-7D**, **Pullulan**, reaction product with hexanediamine derivs **136462-90-3 190280-36-5 190280-37-6** **190280-38-7** 190280-39-8
RL: PEP (Physical, engineering or chemical process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(surface coating of liposomes with hydrophobized polysaccharides)
IT **9004-54-0**, **Dextran**, biological studies **9036-88-8** , **Mannan 9057-02-7**, **Pullulan** **9057-02-7D**, **Pullulan**, reaction product with hexanediamine derivs **136462-90-3 190280-36-5** **190280-37-6 190280-38-7**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(surface coating of liposomes with hydrophobized polysaccharides)
RN 9004-54-0 HCAPLUS
CN Dextran (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9036-88-8 HCAPLUS
CN D-Mannan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9057-02-7 HCAPLUS
CN Pullulan (9CI) (CA INDEX NAME)

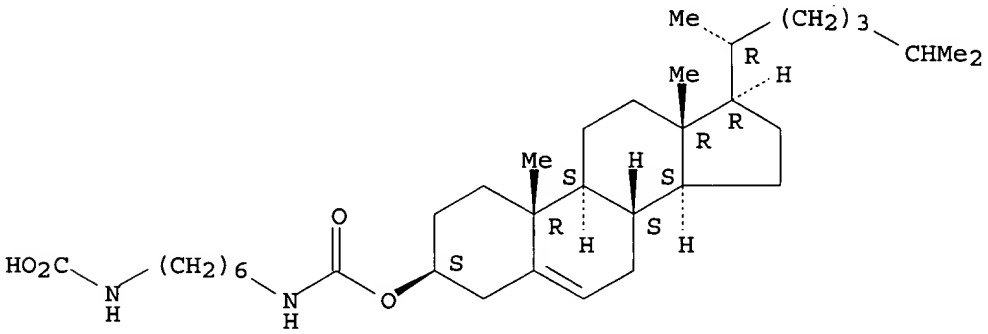
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9057-02-7 HCAPLUS
CN Pullulan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 136462-90-3 HCAPLUS
CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

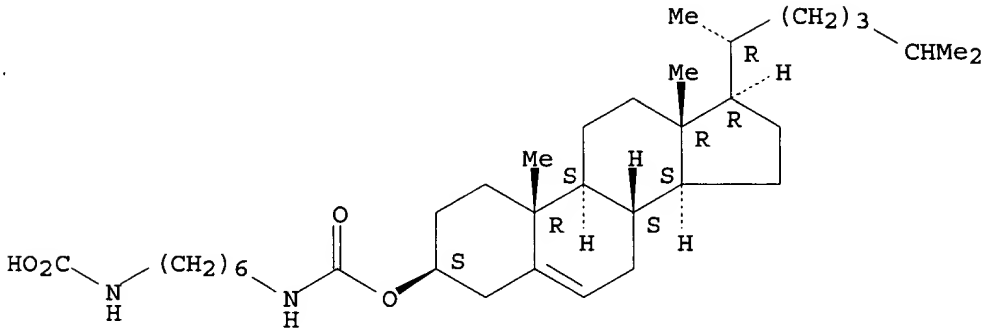
CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 190280-36-5 HCAPLUS
CN Dextran, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

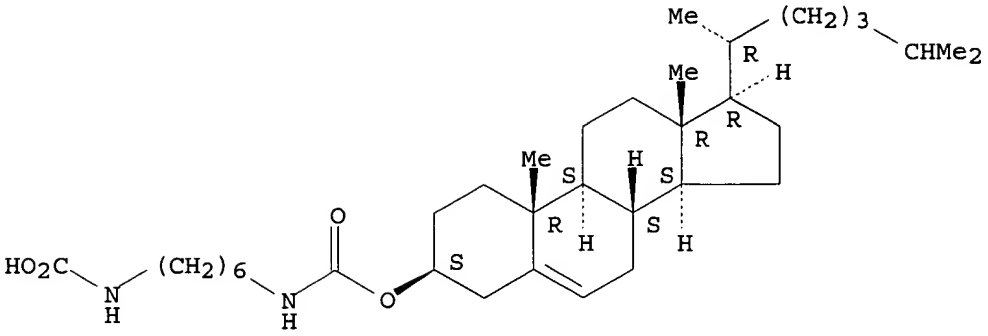
CRN 9004-54-0
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 190280-37-6 HCAPLUS
CN D-Mannan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



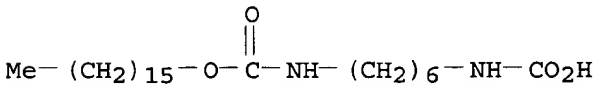
CM 2

CRN 9036-88-8
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 190280-38-7 HCAPLUS
CN Pullulan, [6-[[(hexadecyloxy)carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 190196-55-5
CMF C24 H48 N2 O4



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L32 ANSWER 15 OF 18 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1996:522328 HCAPLUS
DOCUMENT NUMBER: 125:230598
TITLE: Macromolecular complex between soluble protein and hydrogel nanoparticle of amphiphilic polysaccharides: complexation and stabilization of insulin
AUTHOR(S): Kobayashi, S.; Akiyoshi, K.; Sunamoto, J.; Baudy, M.; Kim, S.W.
CORPORATE SOURCE: Graduate School of Engineering, Kyoto University, Kyoto, 606-01, Japan
SOURCE: Proc. Int. Symp. Controlled Release Bioact. Mater. (1996), 23rd, 643-644
CODEN: PCRMEY; ISSN: 1022-0178

DOCUMENT TYPE: Journal
LANGUAGE: English

AB Biocolloidal and thermal stabilization of insulin upon the complexation with cholesterol-bearing pullulan (CHP) nanoparticles is described. Degrdn. of insulin by digestive enzyme was drastically retarded upon the complexation. Insulin was released from the complex by addn. of BSA. The CHP-insulin complex injected i.v. decreased the blood glucose level down to 50-60% of the original one within 30 min.

CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 2

IT 9004-10-8D, Insulin, complexes with cholesterol-bearing **pullulan** **136462-90-3D**, complexes with insulin
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(complexation and stabilization of insulin with amphiphilic polysaccharide hydrogel nanoparticles)

IT **136462-90-3**
RL: RCT (Reactant)
(complexation and stabilization of insulin with amphiphilic polysaccharide hydrogel nanoparticles)

IT **136462-90-3D**, complexes with insulin
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(complexation and stabilization of insulin with amphiphilic polysaccharide hydrogel nanoparticles)

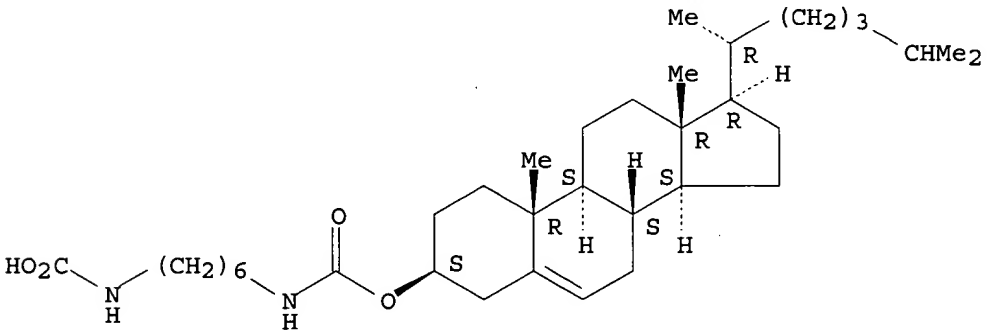
RN 136462-90-3 HCAPLUS

CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

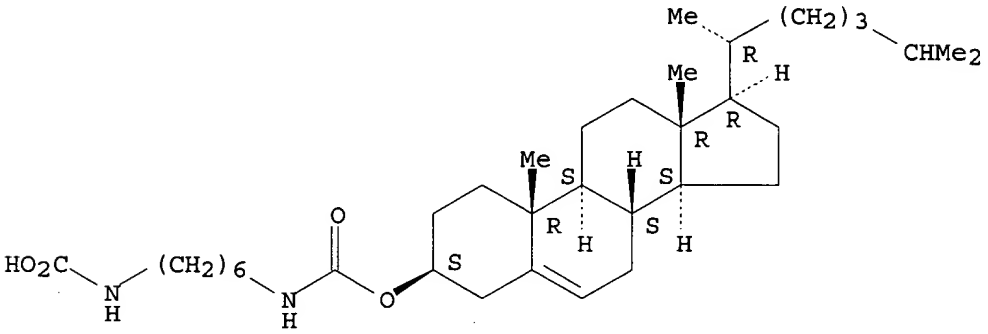
IT **136462-90-3**

RL: RCT (Reactant)
(complexation and stabilization of insulin with amphiphilic polysaccharide hydrogel nanoparticles)
RN 136462-90-3 HCAPLUS
CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

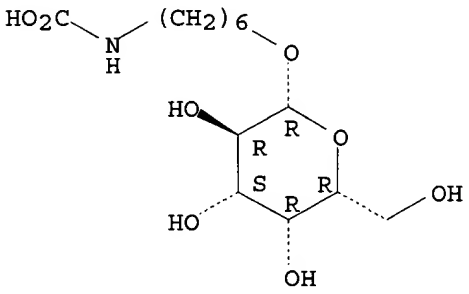
L32 ANSWER 16 OF 18 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1996:522320 HCAPLUS
DOCUMENT NUMBER: 125:308905
TITLE: Hydrogel nanoparticle of cell-specific amphiphilic polysaccharide
AUTHOR(S): Taniguchi, I.; Akiyoshi, K.; Sunamoto, J.
CORPORATE SOURCE: Graduate school of Engineering, Kyoto University, Kyoto, 606-01, Japan
SOURCE: Proc. Int. Symp. Controlled Release Bioact. Mater. (1996), 23rd, 635-636
CODEN: PCRMEY; ISSN: 1022-0178
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The complexation of adriamycin with the hydrogel nanoparticle of hydrophobized cholesterol-bearing pullulan (CHP) self aggregates is described. The synthesis and characterization of cell-specific hydrophobized polymer are also described. Under the controlled condition, the cytotoxicity of adriamycin decreased upon the complexation. The diminished cytotoxicity of complexed adriamycin will be improved by modification of CHP with a cell-specific saccharide determinant, which makes receptor-mediated cell uptake possible.
CC 63-6 (Pharmaceuticals)

Section cross-reference(s): 33
ST adriamycin hydrogel nanoparticle **pullulan** deriv
IT 25316-40-9D, Adriamycin, complexes with cholesterol-**pullulan** derivs. **182072-25-9D**, complexes with adriamycin **182072-26-0D**, complexes with adriamycin **183181-88-6D**, complexes with adriamycin
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hydrogel nanoparticle of cell-specific amphiphilic polysaccharides)
IT **182072-25-9 182072-26-0 183181-88-6**
RL: RCT (Reactant)
(hydrogel nanoparticle of cell-specific amphiphilic polysaccharides)
IT **182072-25-9D**, complexes with adriamycin **182072-26-0D**, complexes with adriamycin **183181-88-6D**, complexes with adriamycin
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hydrogel nanoparticle of cell-specific amphiphilic polysaccharides)
RN 182072-25-9 HCAPLUS
CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate [6-(.beta.-D-galactopyranosyloxy)hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 181576-70-5
CMF C13 H25 N O8
CDES 5:B-D-GALACTO

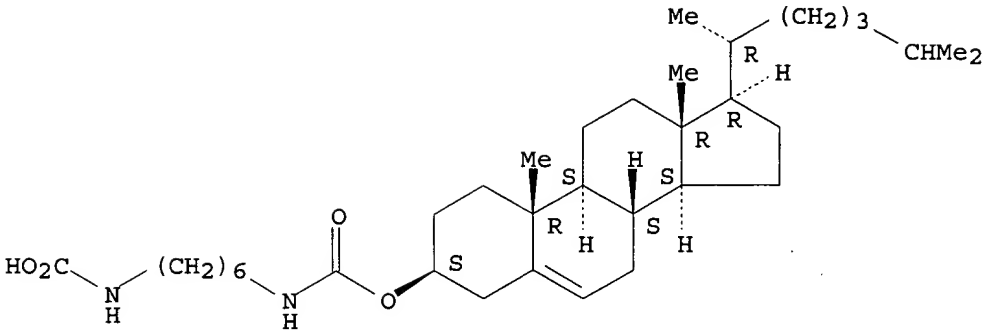
Absolute stereochemistry.



CM 2

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 3

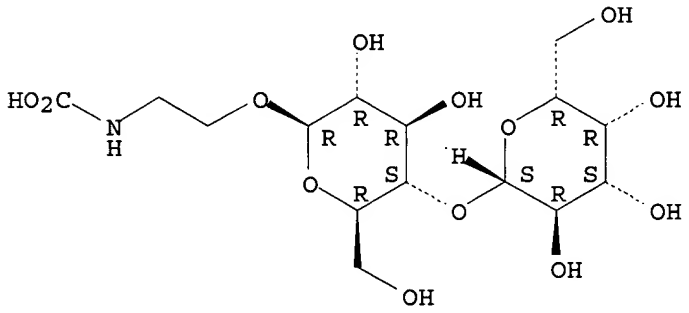
CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 182072-26-0 HCAPLUS
CN Pullulan, [6-[[[(3.beta.)-cholest-5-en-3-yloxy]carbonyl]amino]hexyl]carbamate [2-[(4-O-.beta.-D-galactopyranosyl-.beta.-D-glucopyranosyl)oxy]ethyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 181576-72-7
CMF C15 H27 N O13
CDES 5:B-D-GALACTO,B-D-GLUCO

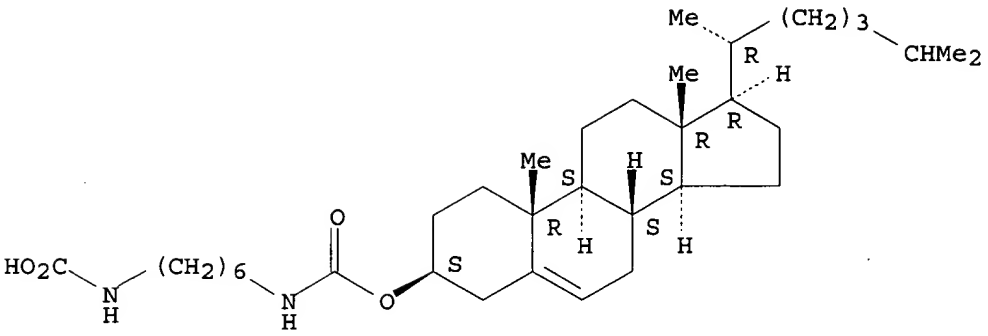
Absolute stereochemistry.



CM 2

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



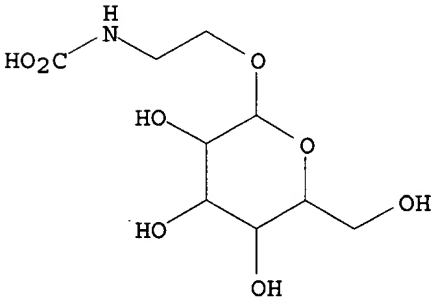
CM 3

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 183181-88-6 HCAPLUS
CN Pullulan, [6-[[[(3.beta.)-cholest-5-en-3-yloxy]carbonyl]amino]hexyl]carbamate [2-(.beta.-D-galactopyranosyloxy)ethyl]carbamate (9CI) (CA INDEX NAME)

CM 1

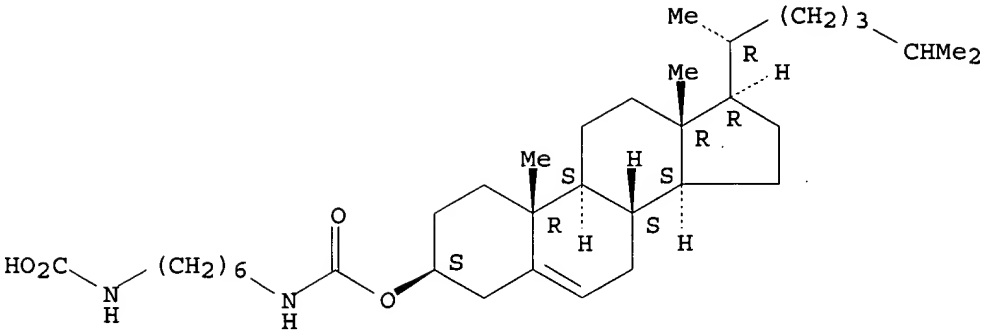
CRN 183071-65-0
CMF C9 H17 N O8
CDES 5:B-D-GALACTO



CM 2

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 3

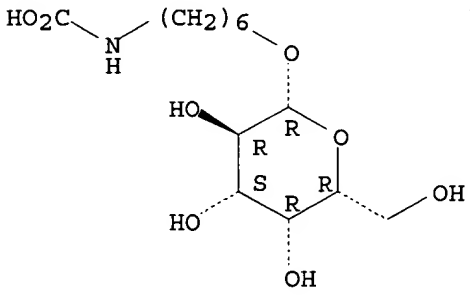
CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **182072-25-9 182072-26-0 183181-88-6**
RL: RCT (Reactant)
(hydrogel nanoparticle of cell-specific amphiphilic polysaccharides)
RN 182072-25-9 HCAPLUS
CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate [6-(.beta.-D-galactopyranosyloxy)hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 181576-70-5
CMF C13 H25 N O8
CDES 5:B-D-GALACTO

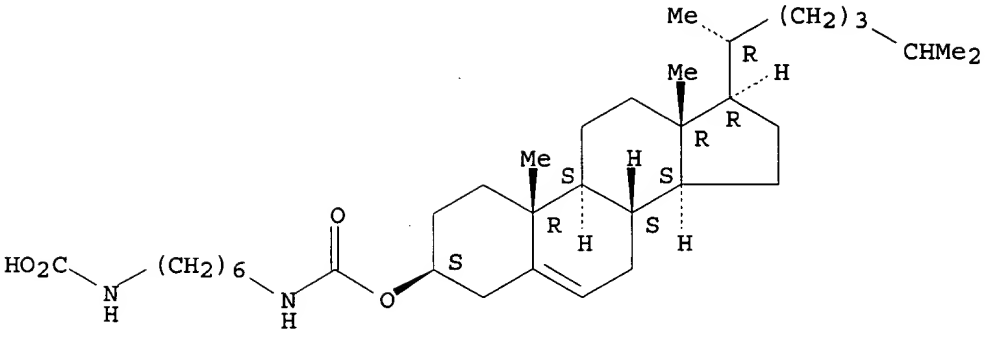
Absolute stereochemistry.



CM 2

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 3

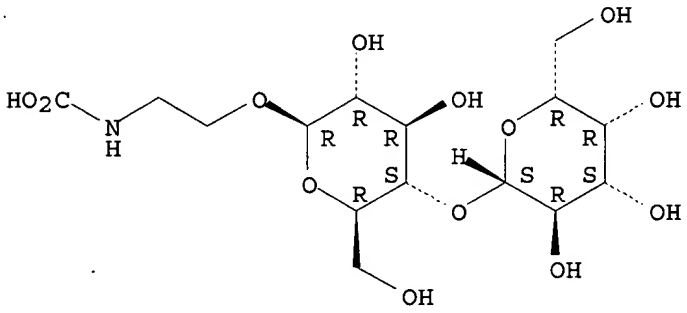
CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 182072-26-0 HCAPLUS
CN Pullulan, [6-[[[(3.beta.)-cholest-5-en-3-yloxy]carbonyl]amino]hexyl]carbamate [2-[(4-O-.beta.-D-galactopyranosyl-.beta.-D-glucopyranosyl)oxy]ethyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 181576-72-7
CMF C15 H27 N O13
CDES 5:B-D-GALACTO,B-D-GLUCO

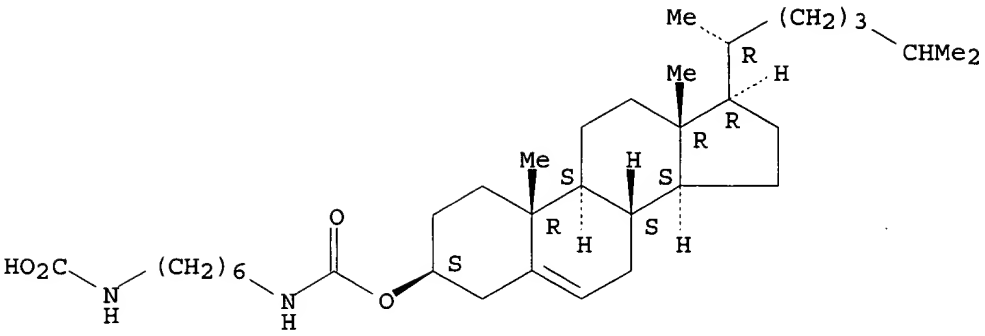
Absolute stereochemistry.



CM 2

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



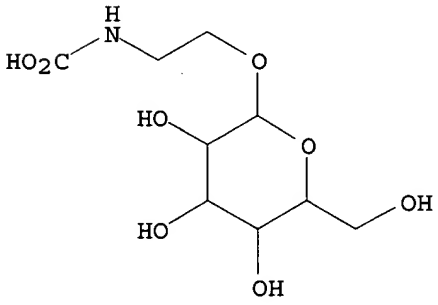
CM 3

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 183181-88-6 HCAPLUS
CN Pullulan, [6-[[[(3.beta.)-cholest-5-en-3-yloxy]carbonyl]amino]hexyl]carbamate [2-(.beta.-D-galactopyranosyloxy)ethyl]carbamate (9CI) (CA INDEX NAME)

CM 1

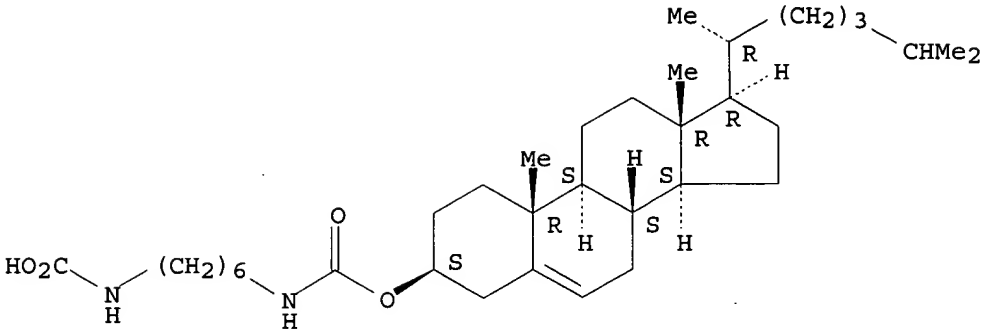
CRN 183071-65-0
CMF C9 H17 N O8
CDES 5:B-D-GALACTO



CM 2

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 3

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L32 ANSWER 17 OF 18 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1995:534741 HCAPLUS
DOCUMENT NUMBER: 123:170013
TITLE: Self-assembly of hydrophobized polysaccharide Structure of hydrogel nanoparticle and complexation with organic compounds
AUTHOR(S): Akiyoshi, Kazunari; Deguchi, Shigeru; Tajima, Hitoshi; Nishikawa, Takehiro; Sunamoto, Junzo
CORPORATE SOURCE: Graduate School Engineering, Kyoto University, Yoshida Hommachi, 606-01, Japan
SOURCE: Proc. Jpn. Acad., Ser. B (1995), 71(1), 15-19
CODEN: PJABDW; ISSN: 0386-2208
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Self-assembly of hydrophobized polysaccharides in water was investigated by dynamics and static light scattering, and by fluorescence and CD spectroscopies. Cholesterol bearing pullulan (CHP) forms nanosize hydrogel by self-aggregation in water. The hydrogel network was formed by non-covalent cross-linked domain. The nano-particles strongly bound various hydrophobic compds. Induced CD was obsd. upon the enantioselective binding with bilirubin.

CC 33-5 (Carbohydrates)
Section cross-reference(s): 32

ST hydrogen bond **pullulan** cholesterol bilirubin; **pullulan** cholesterol enantioselective binding bilirubin; polysaccharide hydrogel enantioselective binding bilirubin

IT 635-65-4D, Bilirubin, cholesterol-contg. **pullulan** complex
136462-90-3D, bilirubin complex
RL: PRP (Properties); RCT (Reactant)
(self-assembly of hydrophobized polysaccharide structure of hydrogel nanoparticle and complexation with bilirubin)

IT **136462-90-3D**, bilirubin complex
RL: PRP (Properties); RCT (Reactant)
(self-assembly of hydrophobized polysaccharide structure of hydrogel nanoparticle and complexation with bilirubin)

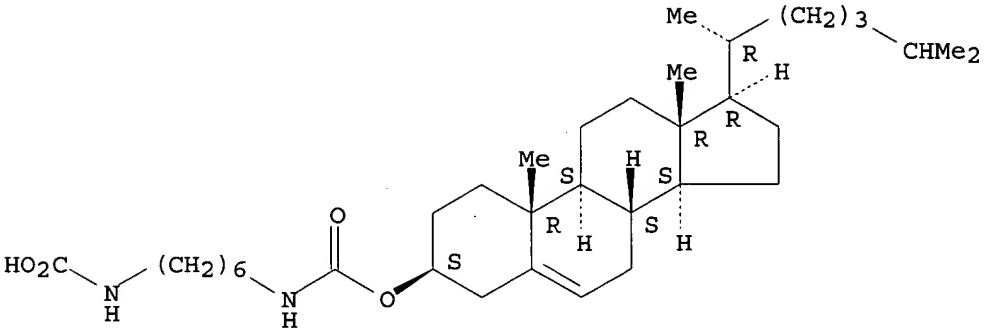
RN 136462-90-3 HCAPLUS

CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L32 ANSWER 18 OF 18 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1991:608391 HCAPLUS
DOCUMENT NUMBER: 115:208391
TITLE: Self-aggregates of hydrophobic polysaccharide derivatives
AUTHOR(S): Akiyoshi, Kazunari; Yamaguchi, Shigehiko; Sunamoto, Junzo
CORPORATE SOURCE: Fac. Eng., Kyoto Univ., Kyoto, 606, Japan
SOURCE: Chem. Lett. (1991), (7), 1263-6
CODEN: CMLTAG; ISSN: 0366-7022
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Hydrophobic polysaccharide derivs. bearing palmitoyl or cholesterol moieties form self aggregates in an aq. soln. The crit. concns. to give the polymer aggregates depended on the degree of substitution of the hydrophoic moiety. Cholesterol-bearing pullulan showed a stronger binding for hydrophobic guest mols. and higher colloidal stability compared with the corresponding palmitoyl-bearing polysaccharide.

CC 33-5 (Carbohydrates)
Section cross-reference(s): 32

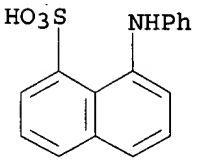
IT Molecular association
(of **pullulan** derivs. with self and anilinonaphthalenesulfonate)

IT 136484-96-3P **136772-50-4P**
RL: PREP (Preparation)
(formation and binding const. of)

IT 53572-58-0P **136462-90-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and binding of, with magnesium anilinonaphthalenesulfonate)
IT **9057-02-7, Pullulan**
RL: RCT (Reactant)
(reaction of, with cholesteryl N-(isocyanatohexyl)carbamate)
IT **136772-50-4P**
RL: PREP (Preparation)
(formation and binding const. of)
RN 136772-50-4 HCAPLUS
CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate, mono[8-(phenylamino)-1-naphthalenesulfonate] (salt) (9CI) (CA INDEX NAME)

CM 1

CRN 82-76-8
CMF C16 H13 N O3 S



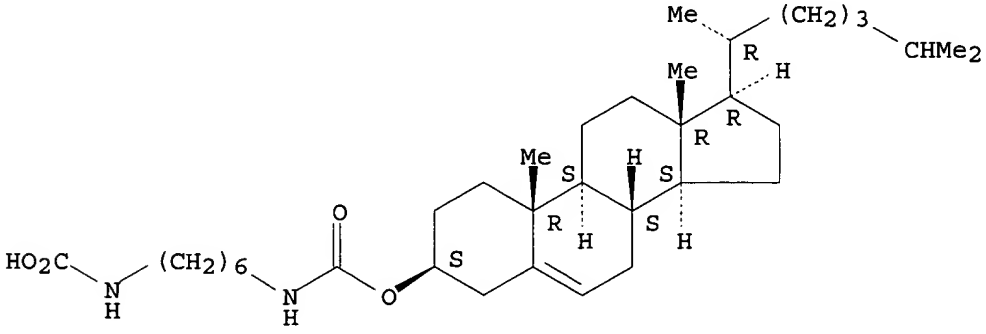
CM 2

CRN 136462-90-3
CMF C35 H60 N2 O4 . x Unspecified
CDES 8:GD,ESTER

CM 3

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 4

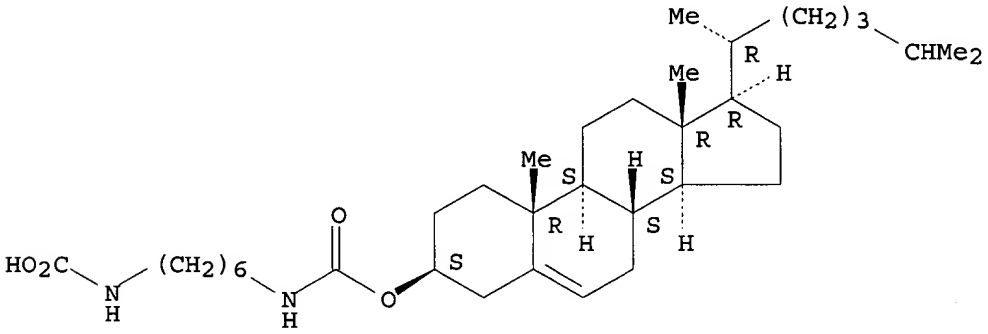
CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **136462-90-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and binding of, with magnesium anilinonaphthalenesulfonate)
RN 136462-90-3 HCAPLUS
CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **9057-02-7, Pullulan**
RL: RCT (Reactant)
(reaction of, with cholesteryl N-(isocyanatohexyl)carbamate)
RN 9057-02-7 HCAPLUS
CN Pullulan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 1 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:176867 HCAPLUS
DOCUMENT NUMBER: 134:227151
TITLE: Hydrophobic group-containing polysaccharides for use as fragrance-retaining agents
INVENTOR(S): Yano, Yoshihiro; Shimada, Kunio; Fukuda, Nobuo
PATENT ASSIGNEE(S): Nippon Oil and Fats Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001064668	A2	20010313	JP 1999-246517	19990831

AB This invention relates to skin prepns. and cleaning prepns. comprising fragrance-retaining agents. The fragrance-retaining agents comprise water-resistant hydrophobic group-introduced polysaccharides. Use of these fragrance-retaining agents on pet is also claimed. Pullulan was treated with N-(6-isocyanatohexyl)cholesterylcarbamate to give a pullulan cholesterol deriv. A soln. contg. the above product 0.1, ethanol 1, limonene 0.01, methylparaben 0.1, and ion-exchanged water 98.79 % showed an excellent aroma-retaining property.

IC ICM C11B009-00
ICS A61K007-46

CC 62-5 (Essential Oils and Cosmetics)

IT **136462-90-3P 190280-37-6P** 301297-12-1P
RL: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(hydrophobic group-contg. polysaccharides for fragrance-retaining agents)

IT **136462-90-3P 190280-37-6P**
RL: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(hydrophobic group-contg. polysaccharides for fragrance-retaining agents)

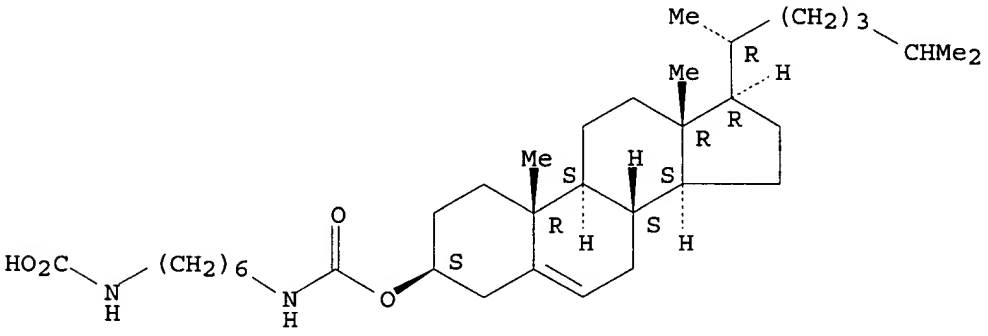
RN 136462-90-3 HCAPLUS

CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

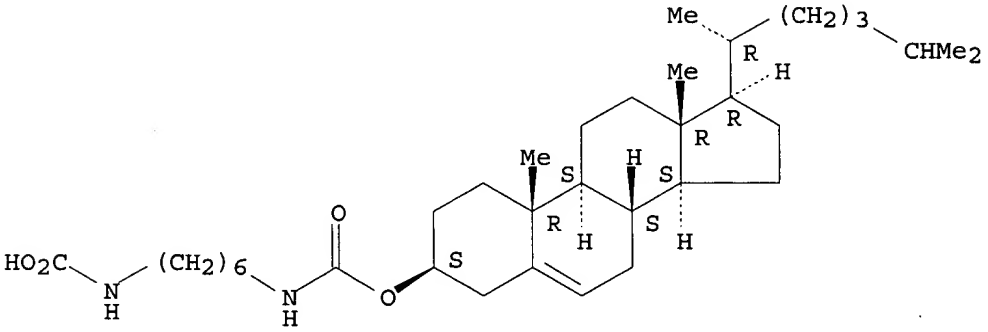
CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 190280-37-6 HCAPLUS
CN D-Mannan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9036-88-8
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 2 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:164799 HCAPLUS
DOCUMENT NUMBER: 132:325942
TITLE: Polysaccharide coated niosomes for oral drug delivery: formulation and in vitro stability studies
AUTHOR(S): Sihorkar, V.; Vyas, S. P.
CORPORATE SOURCE: Drug Delivery Res. Lab., Dep. of Pharm. Sci., De. H.S. Gour Vishwavidyalaya, Sagar, India
SOURCE: Pharmazie (2000), 55(2), 107-113
CODEN: PHARAT; ISSN: 0031-7144
PUBLISHER: Govi-Verlag Pharmazeutischer Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Nonionic surfactant vesicles (niosomes) were prepd. and appended with a polysaccharide cap using hydrophobic anchors. Hydrophobized polysaccharides, O-palmitoyl pullulan (OPPu) and cholesteroyl pullulan (CHPu) were anchored onto propranolol.cntdot.HCl contg. preformed niosomes. The coated niosomes were characterized for av. vesicle size, size distribution, shape, encapsulation efficiency and in vitro release profile and were compared with their uncoated counterparts. No

significant difference was obsd. in % encapsulation (P > 0.05 in a rank sum test) of polysaccharide coated and uncoated vesicles. In vitro release studies however, revealed a significant lowering (P < 0.01) of drug release for the coated systems in simulated gastric and intestinal fluids with a biphasic release profile. The influence of the hydrophobized polysaccharide cap on niosomal membrane integrity and stabilization against harsh bio-environment conditions was also investigated. The parameters investigated include detergent and bile (bile salts and fresh-pooled rat bile) challenge, freeze-thaw cycling, osmotic stress, and long term and shelf stability studies. It was seen that at higher bile salt concns. and detergent content, uncoated niosomes underwent bilayer solubilization into intermediate micellar structures, whereas coated niosomes were able to maintain their structural integrity as reflected from their higher % latency for the entrapped water sol. agent. Similarly, freeze-thaw cycling could not bring any fusion or collapse of the niosomal membrane (unlike uncoated ones). Furthermore, the exceptional shelf stability of the coated vesicles both at 37 .+-. 1.degree. and at 4 .+-. 1.degree.C establishes the potential of polysaccharide coated niosomes as an oral delivery system for water-sol. agents. Results from OPPu and CHPu coated niosomal systems for their oral stability potential are compared.

CC 63-5 (Pharmaceuticals)

IT 53572-58-0P, Pullulan palmitate **103334-25-4P**
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(formulation and in vitro stability studies of polysaccharide coated niosomes for oral drug delivery)

IT **103334-25-4P**
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(formulation and in vitro stability studies of polysaccharide coated niosomes for oral drug delivery)

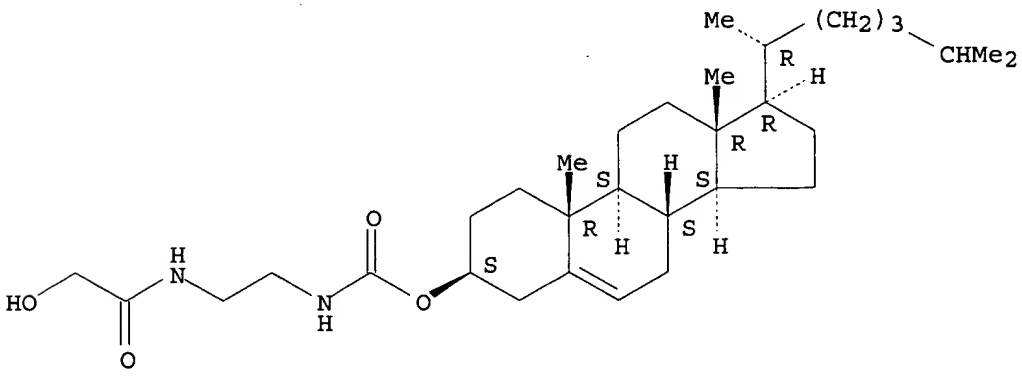
RN 103334-25-4 HCAPLUS

CN Pullulan, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

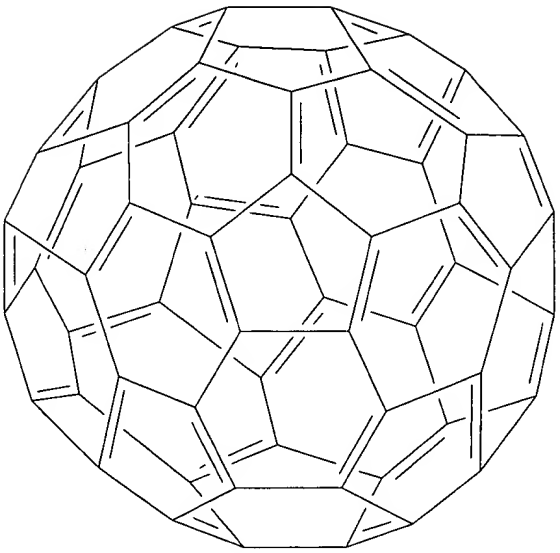
CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 3 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:51397 HCAPLUS
DOCUMENT NUMBER: 132:237285
TITLE: Complexation of C60 fullerene with cholesteryl group-bearing pullulan in aqueous medium
AUTHOR(S): Lai, Douglas T.; Neumann, Markus A.; Matsumoto, Mutsuo; Sunamoto, Junzo
CORPORATE SOURCE: Advanced Research and Technology Center, Niihama National College of Technology, Niihama, 792-8580, Japan
SOURCE: Chemistry Letters (2000), (1), 64-65
CODEN: CMLTAG; ISSN: 0366-7022
PUBLISHER: Chemical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Water-sol. complex between C60 fullerene and cholesteryl group-bearing pullulan (CHP) was prepd. C60 fullerene was dissolved in pyridine (10% vol./vol.) in advance and then mixed with an aq. CHP suspension (0.1 mg ml-1). The particle size of the formed complexes varied from 60 nm to 150 nm by the concn. of aq. pyridine in final soln. The complex could retain its integrity for a long period of time without destruction upon heating or freezing.
CC 33-5 (Carbohydrates)
Section cross-reference(s): 25, 32
IT **261711-15-3P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(complexation and water-soly. of C60 fullerene with cholesteryl group-bearing pullulan in aq. medium)
IT **103334-25-4P**, Cholesteryl pullulan
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(complexation and water-soly. of C60 fullerene with cholesteryl group-bearing pullulan in aq. medium)
IT **261711-15-3P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(complexation and water-soly. of C60 fullerene with cholesteryl group-bearing pullulan in aq. medium)
RN 261711-15-3 HCAPLUS
CN Pullulan, 2-[[2-[[[(3.beta.)-cholest-5-en-3-yloxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether, compd. with [5,6]fullerene-C60-Ih (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 99685-96-8
CMF C60



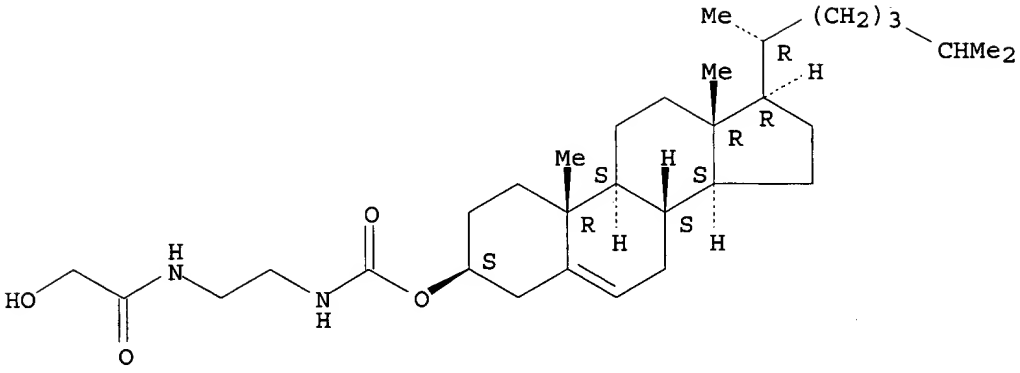
CM 2

CRN 103334-25-4
CMF C32 H54 N2 O4 . x Unspecified
CDES 8:GD,ETHER

CM 3

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 4

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

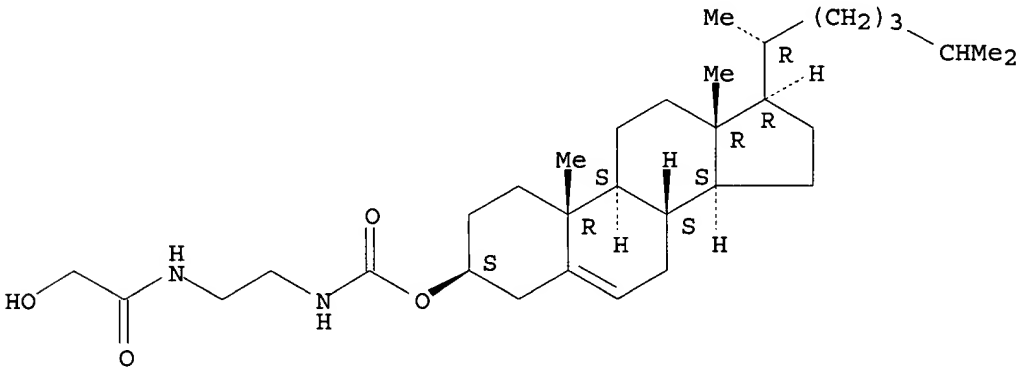
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **103334-25-4P**, Cholesteryl pullulan
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(complexation and water-soly. of C60 fullerene with cholesteryl group-bearing pullulan in aq. medium)
RN 103334-25-4 HCAPLUS
CN Pullulan, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 4 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:620479 HCAPLUS
DOCUMENT NUMBER: 129:327472
TITLE: Hydrophobically driven attachments of synthetic polymers onto surfaces of biological interest: lipid bilayers and globular proteins
AUTHOR(S): Tribet, C.
CORPORATE SOURCE: Laboratoire de Physico-chimie Macromoleculaire, CNRS-UMR 7615 and Universite Paris 6, ESPCI, Paris, F-75231, Fr.
SOURCE: Biochimie (1998), 80(5-6), 461-473
CODEN: BICMBE; ISSN: 0300-9084
PUBLISHER: Editions Scientifiques et Medicales Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB This paper gives a brief overview of the consequences of assocns. between amphiphilic water-sol. polymers and small colloidal particles of biol.

interest: proteins and vesicles. Typical structures of water-sol. synthetic polymers contg. hydrophobic groups are presented. The segregation between polar and apolar units in these polymers induces self-organization in micro-domains despite the lack of specific primary structure. In the presence of other amphiphilic particles like proteins and vesicles, mixed assemblies are formed. Examples of polymer assocns. with vesicles or globular proteins, mainly focused on the acrylic derivs., bring out common features in the mixts. When the size of the polymer is of the same order of magnitude as that of the particle, adsorption of polymer chains creates a protective layer around each individual particle. Depending on the hydrophobicity of the partners, the assocn. can stabilize the dispersion of unmodified particles or induce structural changes (membrane disruption, leakage). When small particles are added to solns. of long polymers, multimol. complexation occurs. In this case, the size of the resulting aggregates depends on the concns. It goes from the size of one polymer mol. up to formally infinity as revealed by gelation. The identification of non-specific assocn. modes between biol. nanoparticles and macromols. might be revealed by the general behavior of these synthetic mixed systems.

CC 6-3 (General Biochemistry)

IT 2644-64-6, Dipalmitoyl phosphatidylcholine 3055-95-6, 3,6,9,12,15-Pentaoxaheptacosan-1-ol 5274-68-0, 3,6,9,12-Tetraoxatetracosan-1-ol 9001-63-2, Lysozyme 25085-02-3D, N-alkyl derivs. 39307-76-1 53572-58-0 62607-09-4 **103334-25-4** 129674-16-4
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(hydrophobically driven attachments of synthetic polymers onto surfaces of biol. interest, lipid bilayers and globular proteins)

IT **103334-25-4**
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(hydrophobically driven attachments of synthetic polymers onto surfaces of biol. interest, lipid bilayers and globular proteins)

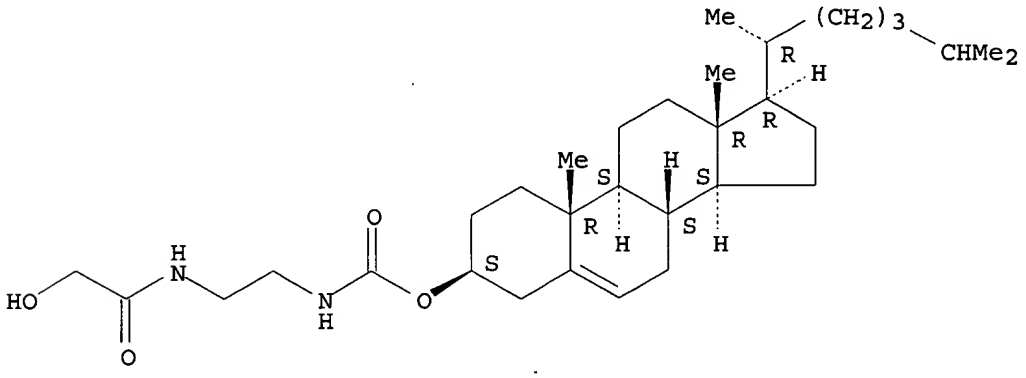
RN 103334-25-4 HCAPLUS

CN Pullulan, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 5 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:575444 HCAPLUS
DOCUMENT NUMBER: 129:327405
TITLE: Complex formation of neocarzinostatin chromophore and hydrophobized polysaccharide as an apoprotein model
AUTHOR(S): Kato, Yusuke; Sugiura, Yukio; Sunamoto, Junzo
CORPORATE SOURCE: Supermolecules Project, International Collaborative Research, Japan Science and Technology Corporation (JST), Kyoto, 619-0200, Japan
SOURCE: Proc. Jpn. Acad., Ser. B (1998), 74B(6), 116-121
CODEN: PJABDW; ISSN: 0386-2208
PUBLISHER: Nippon Gakushiin
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Cholesterol-bearing pullulan (CHP) underwent self-aggregation in water to form hydrogel nanoparticles. Neocarzinostatin chromophore (NCS-chr) was sepd. from the apoprotein of intact neocarzinostatin (NCS) in 0.5 M AcONa/AcOH (pH 4.7) in the dark. Complex formation between NCS-chr and the hydrogel nanoparticle of CHP was studied by high performance size exclusion column chromatog. (HPSEC), UV-vis spectra, fluorescence spectra, and gel electrophoresis. The complex so obtained was water sol. enough. One hydrogel nanoparticle complexed with approx. 38 NCS-chr mols. The complex showed the ability to cleave one DNA strand of the plasmid. When the actual NCS-chr concn. of the complex was above 11.8 .mu.M, circular supercoiled pBR322 plasmid DNA form I was converted to the circular relaxed form II and then to the linear form III. The complexed NCS-chr was stable for three months under storage at 195 K in the dark. Even after heating at 365 K, more than ninety percent of NCS-chr still remained in the complex. This is the first example showing that a simple nonprotein macromol., the self-aggregate of a hydrophobized polysaccharide, can nicely substitute for the apoprotein of NCS.

CC 6-3 (General Biochemistry)

IT 79633-18-4D, Neocarzinostatin chromophore, complexes with hydrophobized polysaccharide **136462-90-3D**, complexes with neocarzinostatin chromophore
RL: BAC (Biological activity or effector, except adverse); FMU (Formation, unclassified); BIOL (Biological study); FORM (Formation, nonpreparative)
(complex formation of neocarzinostatin chromophore and hydrophobized polysaccharide as an apoprotein model)

IT 79633-18-4, Neocarzinostatin chromophore **136462-90-3**
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(complex formation of neocarzinostatin chromophore and hydrophobized polysaccharide as an apoprotein model)

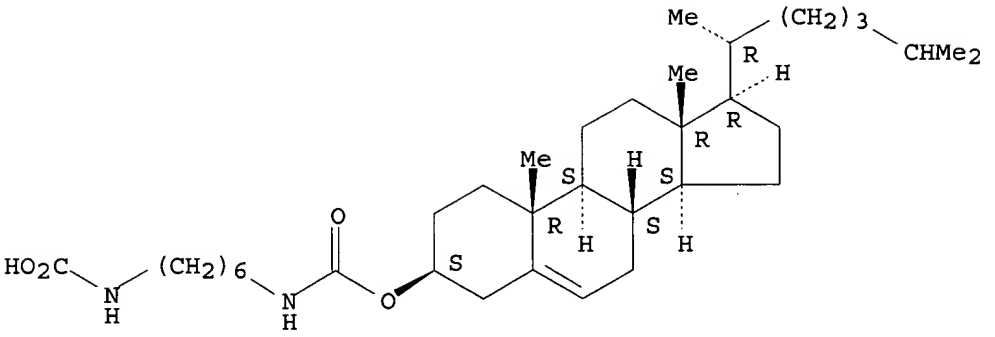
IT **136462-90-3D**, complexes with neocarzinostatin chromophore
RL: BAC (Biological activity or effector, except adverse); FMU (Formation, unclassified); BIOL (Biological study); FORM (Formation, nonpreparative)
(complex formation of neocarzinostatin chromophore and hydrophobized polysaccharide as an apoprotein model)

RN 136462-90-3 HCAPLUS
CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **136462-90-3**
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(complex formation of neocarzinostatin chromophore and hydrophobized polysaccharide as an apoprotein model)

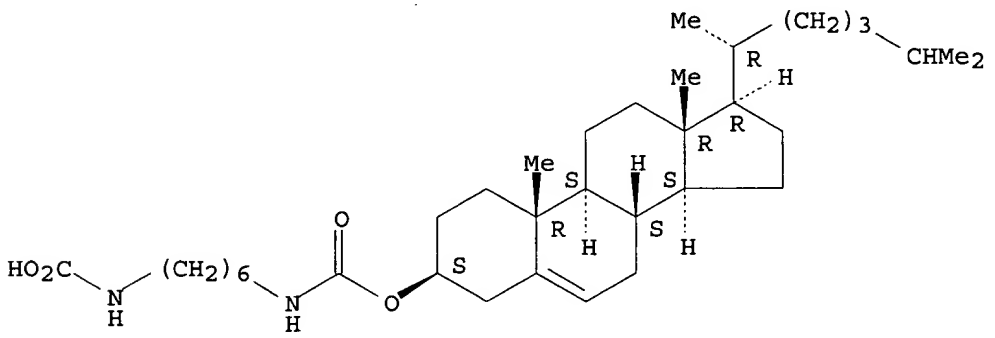
RN 136462-90-3 HCAPLUS

CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 6 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1997:327589 HCAPLUS
DOCUMENT NUMBER: 127:14663
TITLE: Coexistence of two lyotropic lamellar phases induced by a polymer in a phospholipid-water system
AUTHOR(S): Deme, Bruno; Dubois, Monique; Zemb, Thomas; Cabane, Bernard
CORPORATE SOURCE: Serv. Chim. Mol., CEA-Cent. Etud. Saclay, Gif sur Yvette, 91191, Fr.
SOURCE: Colloids Surf., A (1997), 121(2-3), 135-143
CODEN: CPEAEH; ISSN: 0927-7757
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

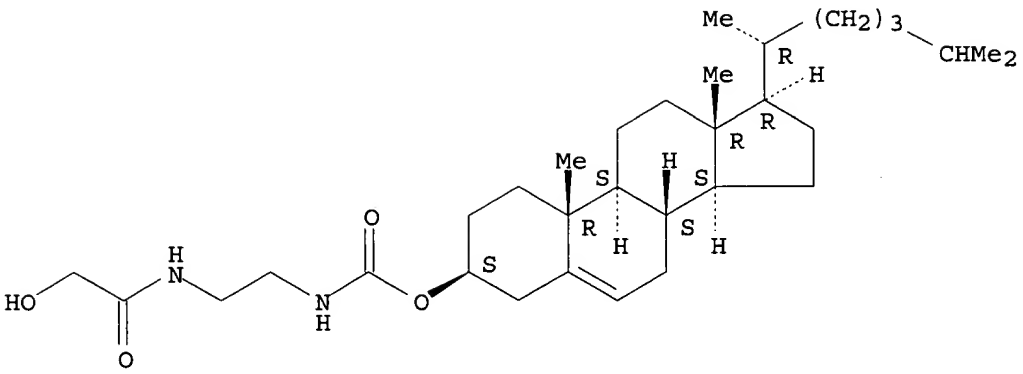
AB The effect of a hydrophobically modified polysaccharide, cholesteryl-pullulan (CHP), on the swelling of the DMPC L.alpha. lamellar phase has been investigated by small angle neutron scattering. The CHP deriv. can be introduced in the aq. layers of the lamellar phase by anchoring lateral cholesterol groups into the bilayers. The resulting lamellar phase (Lp) is stabilized at large membrane sepns. by the introduction of a new repulsive and long range contribution in the force balance of the system. We emphasize here the temp. dependence of two coexisting lamellar phases (L.alpha. + Lp) differing in their polymer content and in their periodicities. At low polymer content (DMPC:CHP = 99:1 by wt.), the two lamellar phases at thermodn. equil. change into a single phase on heating from room temp. to 50.degree.. The new phase (L'p) is characterized by a very large correlation peak whose position is consistent with a lamellar structure following an ideal diln. law. The transition L.alpha. + Lpo .fwdarw. L'p is reversible on cooling, indicating that the obsd. coexistence of the two lamellar phases at room temp. in a true thermodn. equil. At higher polymer content (DMPC:CHP = 95:5 by wt.) the crit. behavior has not been obsd. The periodicity of the Lp phase slightly decreases on heating indicating a redn. in the miscibility gap and a possible crit. point at temps. higher than 50.degree.. However, in the investigated temp. range, the thermodn. coexistence of the two lamellar phases is not affected in this case.

CC 6-6 (General Biochemistry)
IT **103334-25-4**, Cholesteryl-pullulan
RL: BPR (Biological process); PRP (Properties); BIOL (Biological study); PROC (Process)
(complexes with DMPC; coexistence of two lyotropic lamellar phases induced by a polymer in a phospholipid-water system)
IT **103334-25-4**, Cholesteryl-pullulan
RL: BPR (Biological process); PRP (Properties); BIOL (Biological study); PROC (Process)
(complexes with DMPC; coexistence of two lyotropic lamellar phases induced by a polymer in a phospholipid-water system)
RN 103334-25-4 HCAPLUS
CN Pullulan, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 7 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1995:699470 HCAPLUS
DOCUMENT NUMBER: 123:136510
TITLE: Polysaccharides at interfaces. 2. Surface potential of adsorbed cholesteryl-pullulan monolayers at the solution-air interface
AUTHOR(S): Deme, Bruno; Rosilio, Veronique; Baszkin, Adam
CORPORATE SOURCE: Physico-Chimie des Surfaces, URA CNRS 1218, Universite Paris-Sud, 5 rue Jean-Baptiste Clement, Chatenay-Malabry, 92296, Fr.
SOURCE: Colloids Surf., B (1995), 4(6), 367-73
CODEN: CSBBEQ; ISSN: 0927-7765
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The surface potential of adsorbed monolayers of cholesteryl-pullulan (CHP) derivs. has been detd. by the ionizing differential electrode method. It has been found that this potential is highly dependent on the degree of cholesterol grafted onto pullulan, and that the native polysaccharide displays neither surface activity nor surface potential. As the disordered structure of the non-ionic polysaccharide unit generates a random orientation of intrinsic dipole moments, it has been considered that its contribution to the measured surface potential is rather small, compared to the cholesteryl group dipolar contribution. The surface densities of cholesteryl groups of adsorbed CHP mols. have been detd. from the relationship between the surface potential and the surface d. of spread cholesterol mols. The assessment of these quantities was essential, as the detn. of the surface tension data for the CHP derivs. with low cholesteryl content (CHP45-0.6 and CHP50-0.9) was difficult to

achieve (Part I of this work [B. Dem.acte.e, V. Rosilio and A. Baszkin, Colloids Surfaces B: Biointerfaces, 4 (1995) 357]). These results complement those from the surface tension measurements, and confirm that in the surface layer of the adsorbed polysaccharide the ordered cholesteryl groups are oriented towards the air phase and the disordered polysaccharide is immersed in the aq. subphase. Proposed models for semi-organized adsorbed CHP layers are discussed.

CC 6-6 (General Biochemistry)

IT **103334-25-4**, Cholesteryl-pullulan
RL: MSC (Miscellaneous); PRP (Properties)
(surface potential of and orientation of adsorbed cholesteryl-pullulan monolayers at soln.-air interface)

IT **103334-25-4**, Cholesteryl-pullulan
RL: MSC (Miscellaneous); PRP (Properties)
(surface potential of and orientation of adsorbed cholesteryl-pullulan monolayers at soln.-air interface)

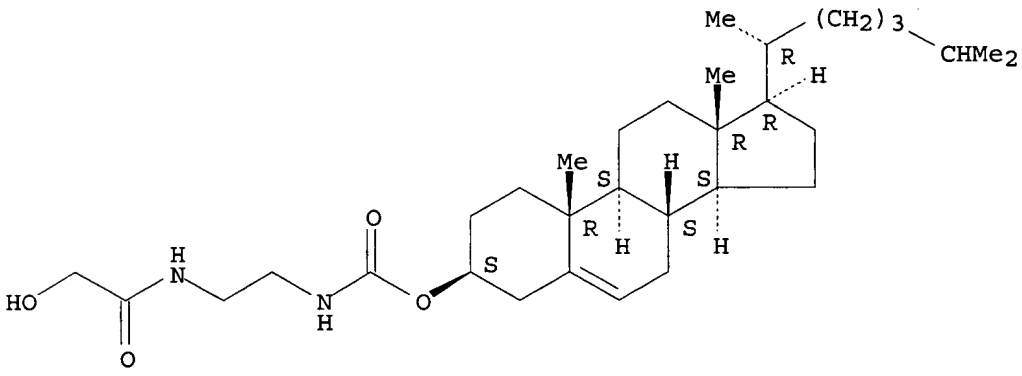
RN 103334-25-4 HCAPLUS

CN Pullulan, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 8 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1995:699469 HCAPLUS
DOCUMENT NUMBER: 123:136509
TITLE: Polysaccharides at interfaces 1. Adsorption of cholesteryl-pullulan derivatives at the solution-air interface. Kinetic study by surface tension measurements
AUTHOR(S): Deme, Bruno; Rosilio, Veronique; Baszkin, Adam

CORPORATE SOURCE: Physico-Chimie des Surfaces, URA CNRS 1218, Universite Paris-Sud, 5 rue Jean-Baptiste Clement, Chatenay-Malabry, 92296, Fr.
SOURCE: Colloids Surf., B (1995), 4(6), 357-65
CODEN: CSBBEQ; ISSN: 0927-7765
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The surface properties of a series of cholesteryl-pullulan (CHP) derivs. have been assessed by surface tension measurements at the soln.-air interface. The results reveal that these properties are related to the nature of the hydrophobic cholesteryl group substituted in pullulan, and that the unsubstituted polysaccharide does not display any surface activity. The adsorption kinetics of such an amphiphilic macromol. has been shown to be diffusion controlled, obeying the Ward and Tordaei diffusional model only at low soln. concns. In the 2.times.10-7-5.times.10-6 mol l-1 concn. range for which this model is verified, the calcd. diffusion coeffs. are concn. dependent. The non-ideality of the system at higher concns. may be explained both by the presence of solute/solute interactions in soln. and in adsorbed monolayers, and by the existence of an adsorbed layer, even at time t0, which prevents the process of adsorption from being governed only by diffusion.

CC 6-6 (General Biochemistry)

IT 9057-02-7, Pullulan **103334-25-4**
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(adsorption of cholesteryl-pullulan derivs. at soln.-air interface.)

IT **103334-25-4**
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(adsorption of cholesteryl-pullulan derivs. at soln.-air interface.)

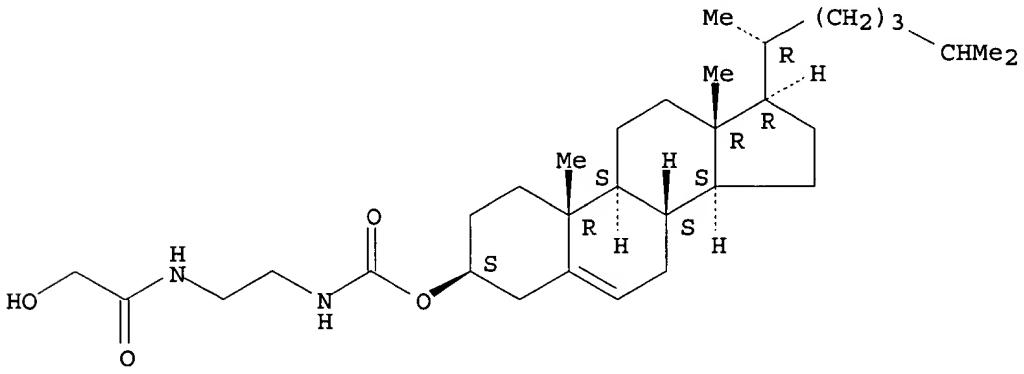
RN 103334-25-4 HCAPLUS

CN Pullulan, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

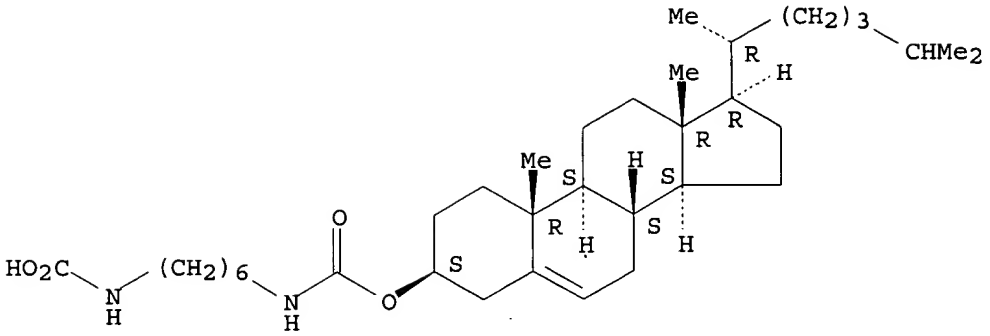
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 9 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1994:260695 HCAPLUS
DOCUMENT NUMBER: 120:260695
TITLE: Anticancer activity of polyunsaturated fatty acid emulsion stabilized by hydrophobized polysaccharide
AUTHOR(S): Fukui, Hiroki; Akiyoshi, Kazunari; Sato, Toshinori; Sunamoto, Junzo
CORPORATE SOURCE: Dep. Polym. Chem., Kyoto Univ., Kyoto, 606, Japan
SOURCE: J. Bioact. Compat. Polym. (1993), 8(4), 305-16
CODEN: JBCPEV; ISSN: 0883-9115
DOCUMENT TYPE: Journal
LANGUAGE: English
AB An oil-in-water emulsion of selectively cytotoxic .alpha.-linolenic acid (ALA, C18:3.omega.3) was stabilized with cholesterol-bearing pullulan (CHP-55-2.1), and the in vivo anticancer effect of the O/W-emulsion was investigated. The O/W-emulsion was prepd. by ultrasonication of a mixt. of CHP and ALA in the presence or absence of trioctanoylglyceride (TriC8). The colloidal stability of the CHP/ALA-emulsion was largely improved by adding TriC8. I.p. injection of the CHP/ALA-emulsion effectively prolonged the survival time of C3H/He mice which received an i.p. transplantation of MM46 mammary tumor cells. The growth of these tumor cells s.c. transplanted in C3H/He mice was also significantly suppressed without any loss of body wt. when CHP/ALA/TriC8-emulsion was i.v. injected. By using this colloidally stable O/W-emulsion, it is possible to systemically administer a lipophilic liq. drug.
CC 1-6 (Pharmacology)
Section cross-reference(s): 63
IT **136462-90-3**, CHP 55-2.1
RL: BIOL (Biological study)
(polyunsatd. fatty acid emulsion stabilization by, neoplasm inhibition in relation to)
IT **136462-90-3**, CHP 55-2.1
RL: BIOL (Biological study)
(polyunsatd. fatty acid emulsion stabilization by, neoplasm inhibition in relation to)
RN 136462-90-3 HCAPLUS
CN Pullulan, [6-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]hexyl]carbamate (9CI) (CA INDEX NAME)

CM 1

CRN 166547-09-7
CMF C35 H60 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 10 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1994:186672 HCAPLUS
DOCUMENT NUMBER: 120:186672
TITLE: Thermal behavior of hydrated dimyristoylphosphatidylcholine/cholesteryl-pullulan mixtures
AUTHOR(S): Rosilio, Veronique; Madelmont, Georgette; Akiyoshi, Kazunari; Sunamoto, Junzo; Baszkin, Adam
CORPORATE SOURCE: Lab. Phys. Chim. Surfaces, Univ. Paris-Sud, Chatenay-Malabry, 92296, Fr.
SOURCE: J. Colloid Interface Sci. (1994), 162(2), 418-24
CODEN: JCISA5; ISSN: 0021-9797
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The thermal behavior of dimyristoylphosphatidylcholine (DMPC)-cholesteryl-pullulan (CHP45-0.6) systems contg. increasing water contents (%) has been investigated by DSC. The thermograms of annealed samples reveal that the presence of CHP45-0.6 shifts the appearance of the main transition peak of the lipid, corresponding to the coexistence of its P.beta.' phase with L.alpha. phase, toward lower water contents. Moreover, the pretransition peak which is related to the presence of free water in the case of pure DMPC was insensitive to the variation in the water content for its mixts. with CHP45-0.6. Also, the appearance of free water in the DMPC-CHP (1:1 wt./wt.) mixt. was obsd. at a water content higher by a factor 3 than that for the pure DMPC. All these results indicate that the increase in fluidity takes place with addn. of CHP45-0.6 to the system. They also show that when the free water appears at higher hydration levels the fluidization of the system is enhanced. The stability of the studied systems results from the interaction of the lipid with CHP45-0.6 and from water content and varies as indicated by the total transition enthalpy and entropy changes in the order DMPC-CHP (1:1 wt./wt.) > DMPC-CHP (5:1 wt./wt.) > DMPC.

CC 9-16 (Biochemical Methods)
Section cross-reference(s): 6, 63, 66

IT 18194-24-6D, L-.alpha.-Dimyristoylphosphatidylcholine, mixt. with cholesteryl-pullulan, hydrated **103334-25-4D**,

Cholesteryl-pullulan, mixt. with dimyristoylphosphatidylcholine, hydrated
RL: ANST (Analytical study)
(thermal behavior of, DSC in study of)

IT **103334-25-4D**, Cholesteryl-pullulan, mixt. with dimyristoylphosphatidylcholine, hydrated
RL: ANST (Analytical study)
(thermal behavior of, DSC in study of)

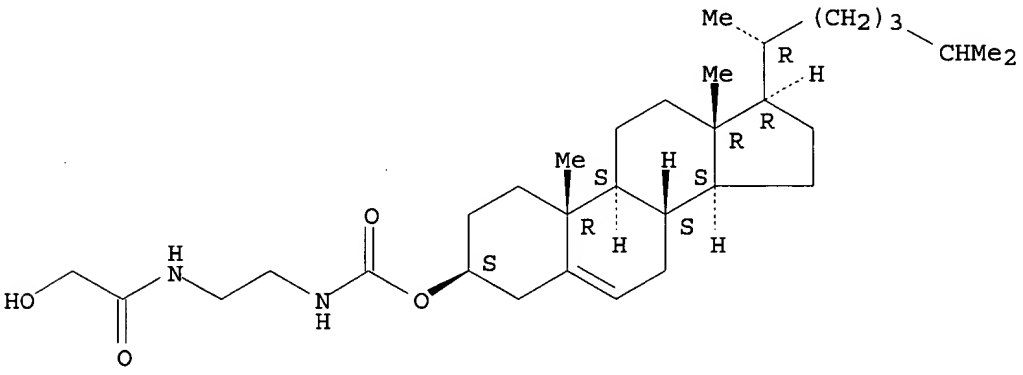
RN 103334-25-4 HCAPLUS

CN Pullulan, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 11 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1993:656512 HCAPLUS
DOCUMENT NUMBER: 119:256512
TITLE: Oral vaccines containing antigen-lipid complexes
INVENTOR(S): Tsuchiya, Seishi; Aramaki, Yukihiko; Hara, Toshifumi; Kikuchi, Hiroshi; Yachi, Kiyoto; Ikeuchi, Tohru
PATENT ASSIGNEE(S): Daiichi Pharmaceutical Co., Ltd., Japan
SOURCE: PCT Int. Appl., 29 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9317702	A1	19930916	WO 1993-JP264	19930302

W: AU, CA, FI, JP, KR, NO, RU, US
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

AU 9335758	A1	19931005	AU 1993-35758	19930302
JP 05339169	A2	19931221	JP 1993-40364	19930302
EP 640347	A1	19950301	EP 1993-904375	19930302
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, NL, PT, SE				
FI 9404052	A	19940902	FI 1994-4052	19940902
NO 9403251	A	19941103	NO 1994-3251	19940902
PRIORITY APPLN. INFO.:			JP 1992-45528	19920303
			WO 1993-JP264	19930302

AB An oral vaccine is prepd. with antigen-lipid complexes, wherein the lipid is mannose-bound glycolipid and/or phosphatidylserine (phospholipid). This vaccine allows absorption of microbial antigens or weakly toxic microorganisms in digestive tract.

IC ICM A61K039-00

CC 63-3 (Pharmaceuticals)

IT 3458-28-4D, D-Mannose, lipid conjugates, complexes with antigens
120503-70-0D, complexes with antigens **147881-10-5D**, complexes with antigens
RL: BIOL (Biological study)
(oral vaccine contg.)

IT **147881-10-5D**, complexes with antigens
RL: BIOL (Biological study)
(oral vaccine contg.)

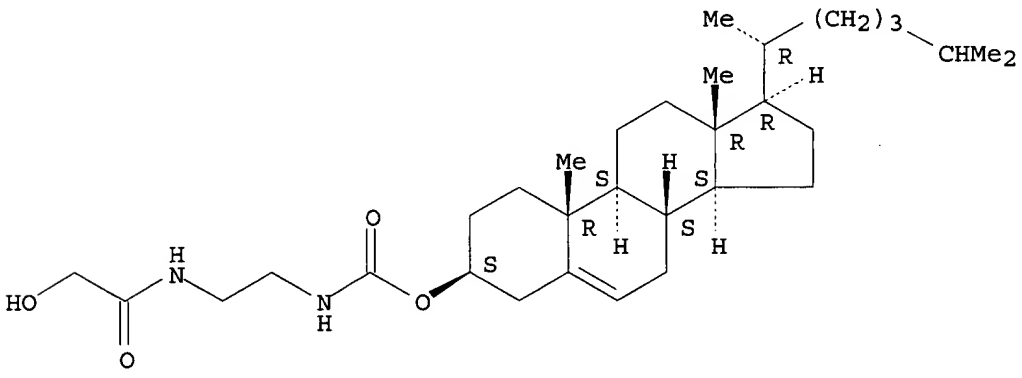
RN 147881-10-5 HCAPLUS

CN D-Mannan, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9036-88-8
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 12 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1993:260790 HCAPLUS
DOCUMENT NUMBER: 118:260790
TITLE: Naturally occurring polysaccharide derivatives which behave as an artificial cell wall on an artificial cell liposome
AUTHOR(S): Sunamoto, Junzo; Sato, Toshinori; Taguchi, Takayuki; Hamazaki, Hiroshi
CORPORATE SOURCE: Dep. Polym. Chem., Kyoto Univ., Yoshida, 606, Japan
SOURCE: Macromolecules (1992), 25(21), 5665-70
CODEN: MAMOBX; ISSN: 0024-9297
DOCUMENT TYPE: Journal
LANGUAGE: English

AB To make a liposome more mech. stable, the liposomal surface was coated with a naturally occurring polysaccharide which bears a hydrophobic anchor such as a cholesterol or palmitoyl residue. The effect of a hydrophobic anchor on the coating efficiency of the liposomal membrane was studied from the viewpoints of the permeability of a polysaccharide-coated liposome and the membrane fluidity. Coating of the liposomal surface with cholesterol derivs. of the polysaccharides was much better at decreasing the membrane permeability of a water-sol. fluorescent probe (6-carboxyfluorescein) than coating with O-palmitoyl polysaccharide.

CC 63-5 (Pharmaceuticals)
Section cross-reference(s): 6

IT **103333-62-6**, Cholesteryl amylopectin **103334-25-4**
147881-06-9 147881-08-1 147881-09-2
147881-10-5
RL: BIOL (Biological study)
(liposomes coated with, for stabilization, membrane permeability decrease by)

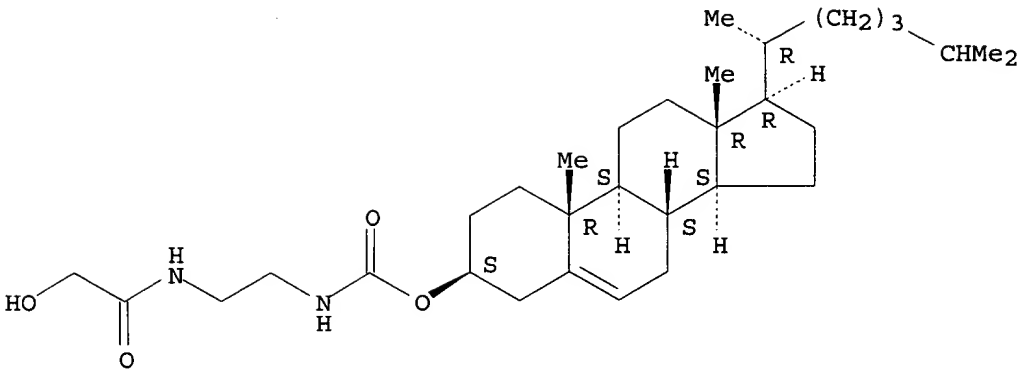
IT **103333-62-6**, Cholesteryl amylopectin **103334-25-4**
147881-06-9 147881-08-1 147881-09-2
147881-10-5
RL: BIOL (Biological study)
(liposomes coated with, for stabilization, membrane permeability decrease by)

RN 103333-62-6 HCAPLUS
CN Amylopectin, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

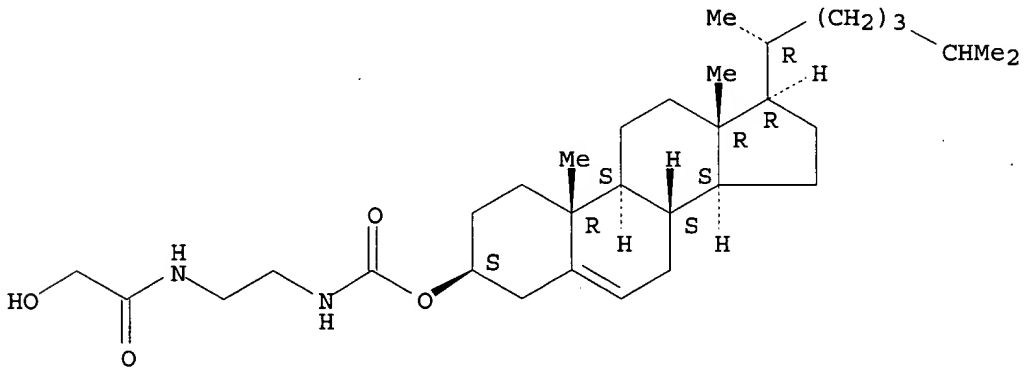
CRN 9037-22-3
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 103334-25-4 HCAPLUS
CN Pullulan, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

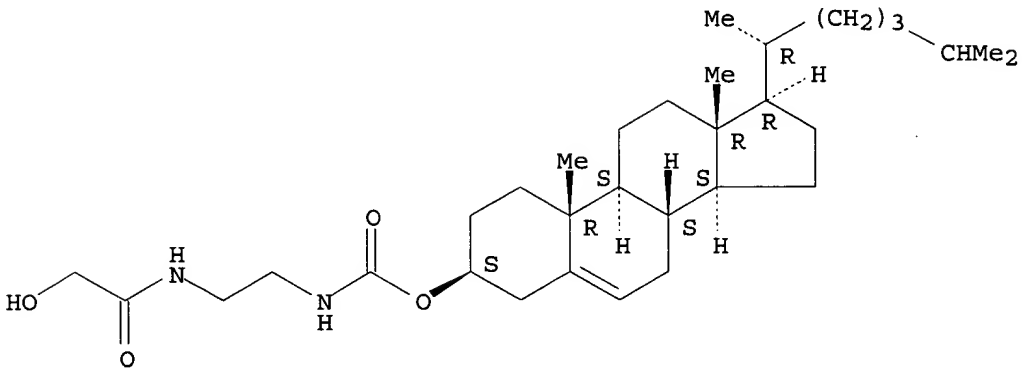
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 147881-06-9 HCAPLUS

CN Amylose, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

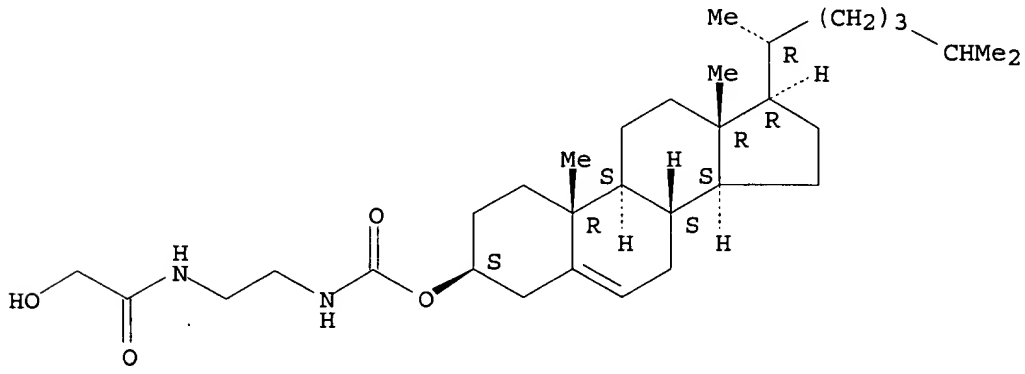
CRN 9005-82-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 147881-08-1 HCAPLUS
CN Dextran, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

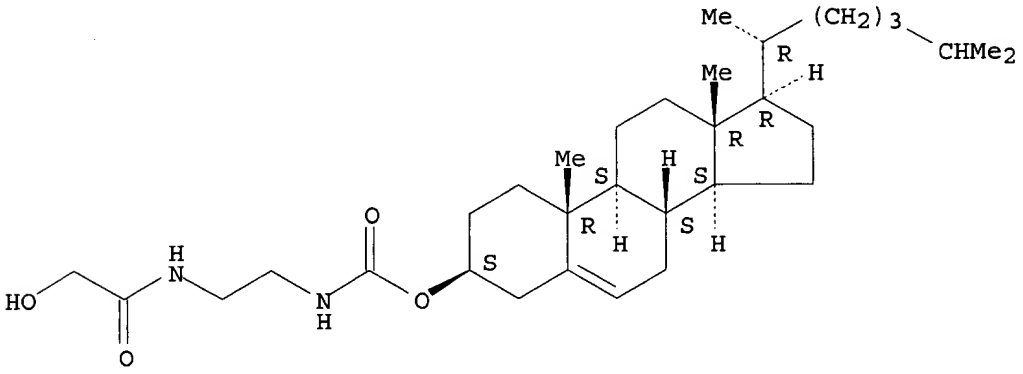
CRN 9004-54-0
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 147881-09-2 HCAPLUS
CN Levan, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

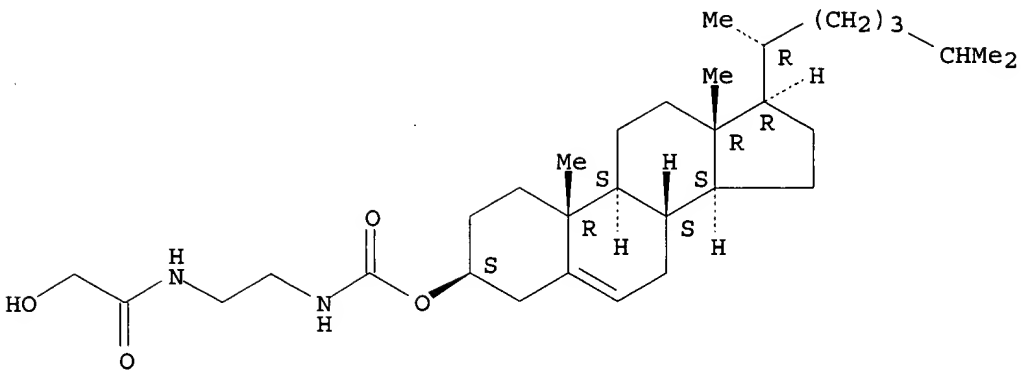
CRN 9013-95-0
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 147881-10-5 HCAPLUS
CN D-Mannan, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9036-88-8
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 13 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1992:476314 HCAPLUS
DOCUMENT NUMBER: 117:76314
TITLE: O/W-emulsion as formed by cholesterol-bearing pullulan
AUTHOR(S): Yamaguchi, Shigehiko; Fukui, Hiroki; Akiyoshi, Kazunari; Sato, Toshinori; Sunamoto, Junzo
CORPORATE SOURCE: Dep. Polym. Chem., Kyoto Univ., Kyoto, 606, Japan
SOURCE: Nippon Kagaku Kaishi (1992), (2), 186-90
CODEN: NKAKB8; ISSN: 0369-4577
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

AB Colloidal stability formed from trioctanoyl glyceride (TriC8) and cholesterol-bearing pullulans (CHP) was investigated. Pullulans (Mw.30,000, 50,000, and 137,000) were substituted in part by cholesteryl groups, and the substitution degree of the cholesterol moieties was 2-6 per hundred glucose units. When TriC8 was emulsified with a given amt. of CHP under sonication, a very stable oil-in-water (O/W) emulsion was obtained. The hydrodynamic diam. detd. by DLS was approx. 100-200 nm. The particle size of oil droplets was due to the temp., the duration, and the power of sonication. The higher the substitution degree of cholesterol of CHP employed was, the more stable the emulsion obtained was, and the less the amt. of CHP required was to obtain relatively stable emulsion. Similarly, the larger the mol. wt. of CHP was, the smaller the particle size was. The O/W-emulsion so obtained was stable enough even in the presence of the Ca2+ ion of physiol. concn. Using this technique, a lipophilic antitumor drug, .alpha.-linolenic acid (ALA), also could be well emulsified by mixing with a suitable amt. of TriC8 in the presence of CHP. These newly developed O/W-emulsion stabilized by cholesterol-bearing pullulan deriv. was promising as a potent carrier of lipophilic drugs.

CC 63-5 (Pharmaceuticals)
IT **126040-70-8**
RL: BIOL (Biological study)
(oil-in-water emulsions contg. trioctoin and, physicochem. properties of, as lipophilic drug carriers)
IT **126040-70-8**

RL: BIOL (Biological study)
(oil-in-water emulsions contg. trioctoin and, physicochem. properties of, as lipophilic drug carriers)
RN 126040-70-8 HCAPLUS

L33 ANSWER 14 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1991:577776 HCAPLUS
DOCUMENT NUMBER: 115:177776
TITLE: Cholesteryl-pullulan and cholesteryl-amylopectin interactions with egg phosphatidylcholine monolayers
AUTHOR(S): Baszkin, Adam; Rosilio, Veronique; Albrecht, Genevieve; Sunamoto, Junzo
CORPORATE SOURCE: Univ. Paris-Sud, Chatenay-Malabry, 92296, Fr.
SOURCE: J. Colloid Interface Sci. (1991), 145(2), 502-11
CODEN: JCISA5; ISSN: 0021-9797
DOCUMENT TYPE: Journal
LANGUAGE: English

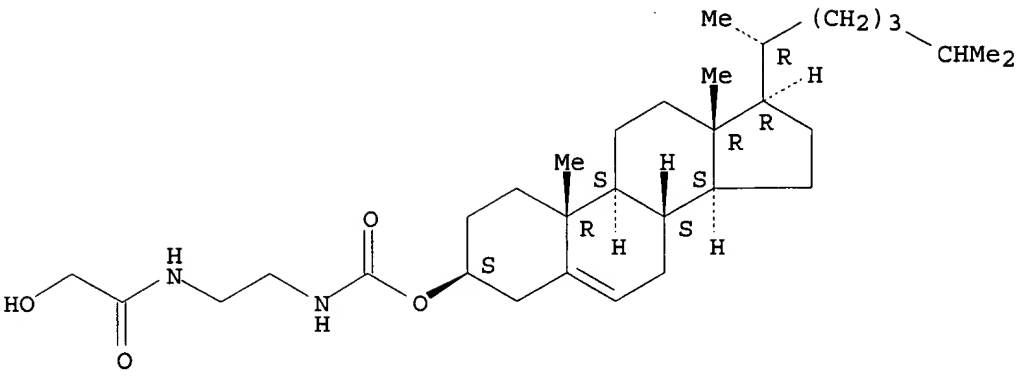
AB The extent of adsorption of cholesteryl-pullulan and cholesteryl-amylopectin at air-water interface was assessed from the surface pressure measurements at const. area. It was found that areas per adsorbed cholesterol deriv. of pullulan and amylopectin are 0.40 and 0.19 nm2, resp. These small areas indicate that sugar moieties of both polysaccharide derivs. are completely immersed in the aq. phase. The surface potential data strongly suggest that the cholesteryl moieties of adsorbed cholesteryl deriv. of pullulan are stretched toward the air phase, but lay flat, exposing lateral CH3 groups to the interface, in the case of a cholesteryl deriv. of amylopectin. Surface pressure and surface potential isotherms of egg-phosphatidylcholine monolayers were shown to be greatly modified in the presence of cholesterol-substituted polysaccharides in the aq. subphase. The results reveal the ability of both polysaccharide derivs. to penetrate the lipid monolayer. However, this effect is superior for cholesteryl-amylopectin, which interacts strongly with the lipid even at very high surface coverages. Cholesteryl-amylopectin also compensates lipid surface potential to a higher extent than cholesteryl-pullulan. This would explain why liposomes coated with cholesteryl-amylopectin exhibit lower stability relative to those coated with a cholesterol deriv. of pullulan.

CC 6-6 (General Biochemistry)
Section cross-reference(s): 66
IT **103333-62-6 103334-25-4**
RL: BIOL (Biological study)
(phosphatidylcholine monolayer interaction with, cholesteryl moieties orientation in)
IT **103333-62-6 103334-25-4**
RL: BIOL (Biological study)
(phosphatidylcholine monolayer interaction with, cholesteryl moieties orientation in)
RN 103333-62-6 HCAPLUS
CN Amylopectin, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9037-22-3
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

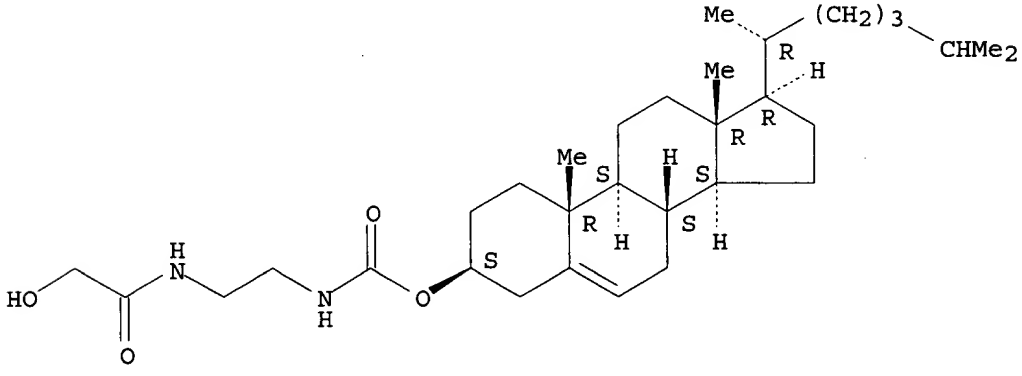
RN 103334-25-4 HCAPLUS

CN Pullulan, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 15 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1991:88658 HCAPLUS
DOCUMENT NUMBER: 114:88658
TITLE: Fatty emulsion stabilized by a polysaccharide derivative
INVENTOR(S): Yamaguchi, Shigehiko; Sunamoto, Junzo
PATENT ASSIGNEE(S): Nippon Oil and Fats Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 13 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 370810	A1	19900530	EP 1989-312173	19891123
EP 370810	B1	19940831		
R: CH, DE, FR, GB, IT, LI, NL, SE				
JP 02144140	A2	19900601	JP 1988-296018	19881125
JP 06061455	B4	19940817		
CA 2003379	AA	19900525	CA 1989-2003379	19891120
CA 2003379	C	19970325		
US 4997819	A	19910305	US 1989-439810	19891121

PRIORITY APPLN. INFO.: JP 1988-296018 19881125

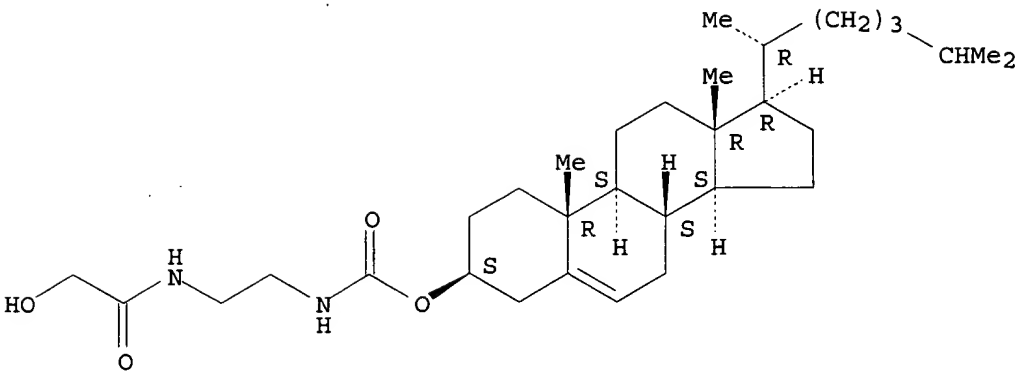
AB Fatty emulsions, esp. pharmaceutical liposomes, are stabilized by lipopolysaccharides or cholesterol derivs. of polysaccharides. Thus, N-[2-(cholesteryloxycarbonylamino)ethyl]carbamoylmethyl pullulan (I) (prepn. described) created stable emulsions of Parasate 800, glycerin, and H2O when I: oil was .gtoreq.0.1.

IC ICM B01F017-00
ICS C08B037-00; A61K009-10
CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 17, 33
IT **103334-25-4P**
RL: PREP (Preparation)
(prepn. of, as emulsion stabilizer)
IT **103334-25-4P**
RL: PREP (Preparation)
(prepn. of, as emulsion stabilizer)
RN 103334-25-4 HCAPLUS
CN Pullulan, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

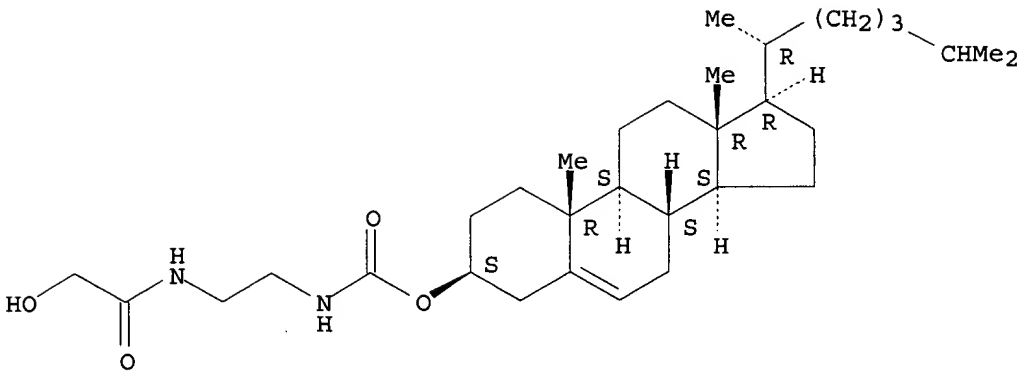
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 16 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1990:412465 HCAPLUS
DOCUMENT NUMBER: 113:12465
TITLE: The effect of polysaccharide adsorption on surface potential of phospholipid monolayers spread at water-air interface [Erratum to document cited in CA112(16):146114t]
AUTHOR(S): Baszkin, Adam; Rosilio, Veronique; Puisieux, Francis; Albrecht, Genevieve; Sunamoto, Junzo
CORPORATE SOURCE: Univ. Paris-Sud, Chatenay-Malabry, 92296, Fr.
SOURCE: Chem. Lett. (1990), (4), 691
CODEN: CMLTAG; ISSN: 0366-7022
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Errors in the captions to Figures 3 and 4 have been cor. The errors were not reflected in the abstr. or the index entries.
CC 66-1 (Surface Chemistry and Colloids)
Section cross-reference(s): 1, 6
IT **103333-62-6 126040-70-8**
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(adsorption of, on phospholipid monolayers spread at air-water interface, surface potential in relation to (Erratum))
IT **103333-62-6 126040-70-8**
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(adsorption of, on phospholipid monolayers spread at air-water interface, surface potential in relation to (Erratum))
RN 103333-62-6 HCAPLUS
CN Amylopectin, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9037-22-3
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 126040-70-8 HCAPLUS

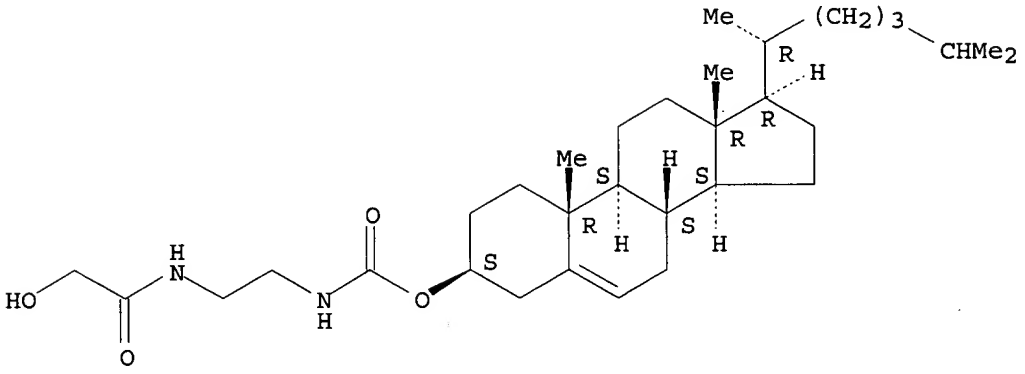
L33 ANSWER 17 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1990:233851 HCAPLUS
DOCUMENT NUMBER: 112:233851
TITLE: Cell specificity of polysaccharide derivatives on liposomal surface
AUTHOR(S): Akiyoshi, Kazunari; Takanabe, Hidenobu; Sato, Tetsuya; Sato, Toshinori; Kondo, Hiroki; Sunamoto, Junzo
CORPORATE SOURCE: Fac. Eng., Kyoto Univ., Kyoto, 606, Japan
SOURCE: Chem. Lett. (1990), (3), 473-6
CODEN: CMLTAG; ISSN: 0366-7022
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Various pollulan derivs., which have both cholesterol and another monosaccharide terminal such as hexosamines and 1-aminohexoses, were synthesized and employed for coating liposomes. The lectin-induced aggregation and the phagocyte uptakes of such polysaccharide-coated liposomes were effectively controlled by changing only the terminal sugar residue of polysaccharide derivs.
CC 15-10 (Immunochemistry)
IT 3416-24-8D, pullulan derivs. 6318-23-6D, .beta.-D-Galactopyranosylamine, pullulan derivs. 7284-37-9D, .beta.-D-Glucopyranosylamine, pullulan derivs. 7388-99-0D, .beta.-D-Mannopyranosylamine, pullulan derivs. 7535-00-4D, pullulan derivs. 9057-02-7, Pullulan 9057-02-7D, Pullulan, polysaccharide derivs. 14307-02-9D, pullulan derivs. **103334-25-4**
RL: BIOL (Biological study)
(liposome membrane coated with, lectin-induced membrane aggregation and phagocyte uptake of)
IT **103334-25-4**
RL: BIOL (Biological study)
(liposome membrane coated with, lectin-induced membrane aggregation and phagocyte uptake of)
RN 103334-25-4 HCAPLUS

CN Pullulan, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 18 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1990:146114 HCAPLUS
DOCUMENT NUMBER: 112:146114
TITLE: The effect of polysaccharide adsorption on surface potential of phospholipid monolayers spread at water-air interface
AUTHOR(S): Baszkin, Adam; Rosilio, Veronique; Puisieux, Francis; Albrecht, Genevieve; Sunamoto, Junzo
CORPORATE SOURCE: Univ. Paris-Sud, Chatenay-Malabry, 92296, Fr.
SOURCE: Chem. Lett. (1990), (2), 299-302
CODEN: CMLTAG; ISSN: 0366-7022
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Surface potential measurements were performed for systems of egg phosphatidylcholine (PC)/cholesteryl-amylopectin and egg PC/cholesteryl-pullulan. The variations of the surface potentials of phospholipid monolayers on injection of polysaccharide derivs. into the aq. subphase were monitored for various surface densities of phospholipids and polysaccharide soln. concns. At a phospholpid surface concn. >1014 mol./cm2, the changes in the surface potentials of the monolayers are higher for amylopectin than for pullulan.

CC 66-1 (Surface Chemistry and Colloids)
Section cross-reference(s): 1, 6

IT **103333-62-6**, Cholesteryl amylopectin **126040-70-8**, Cholesteryl pullulan

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(adsorption of, on phospholipid monolayers spread at air-water interface, surface potential in relation to)

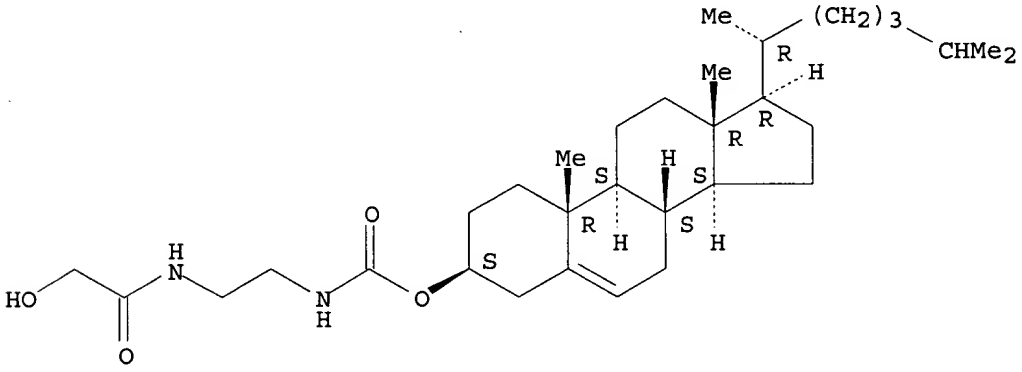
IT **103333-62-6**, Cholesteryl amylopectin **126040-70-8**, Cholesteryl pullulan
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(adsorption of, on phospholipid monolayers spread at air-water interface, surface potential in relation to)

RN 103333-62-6 HCAPLUS
CN Amylopectin, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9037-22-3
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 126040-70-8 HCAPLUS

L33 ANSWER 19 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1989:199043 HCAPLUS
DOCUMENT NUMBER: 110:199043
TITLE: Physicochemical stabilization of lipid microspheres by coating with polysaccharide derivatives
AUTHOR(S): Carlsson, Anders; Sato, Toshinori; Sunamoto, Junzo
CORPORATE SOURCE: Fac. Eng., Nagasaki Univ., Nagasaki, 852, Japan
SOURCE: Bull. Chem. Soc. Jpn. (1989), 62(3), 791-6
CODEN: BCSJA8; ISSN: 0009-2673
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A methodol. to improve lipid microspheres (LM) as a carrier for lipophilic drugs and their physicochem. properties are described. The LM were prepd. from glycerides, glycerol, and phospholipids. The method involves coating of the surface of the LM with a naturally occurring or chem. modified

polysaccharide such as a cholesterol-bearing pullulan and amylopectin. This is the same approach as that adopted for the stabilization of liposomes. Turbidity measurement revealed that the coating effectively depressed the Ca2+-induceed aggregation of the LM. From fluorescence polarization measurements, it was concluded that the fluidity of the LM surface decreased with the polysaccharide coating. The coating reduced the neg. zeta-potential of the LM to an apparently neutral value.

CC 63-5 (Pharmaceuticals)

IT 9004-54-0, Dextran, biological studies 9004-58-4, Ethyl (2-hydroxyethyl) cellulose 9037-22-3, Amylopectin 9057-02-7, Pullulan **103333-62-6 103334-25-4**
RL: BIOL (Biological study)
(pharmaceutical lipid microspheres coating with, stabilization in relation to)

IT **103333-62-6 103334-25-4**
RL: BIOL (Biological study)
(pharmaceutical lipid microspheres coating with, stabilization in relation to)

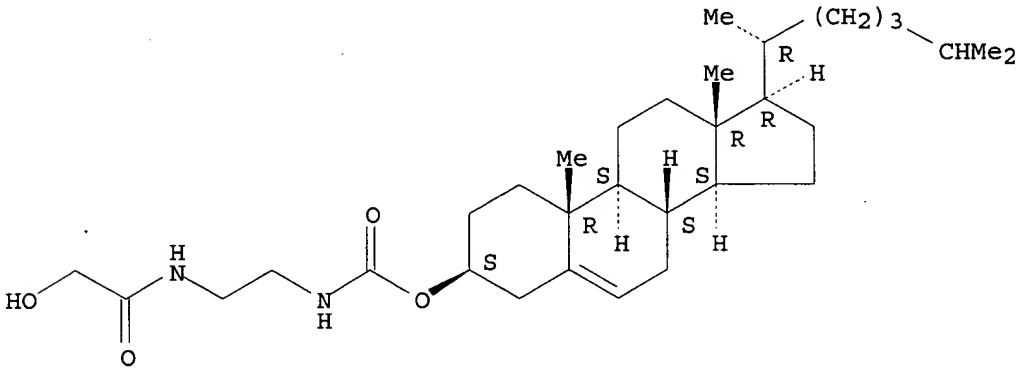
RN 103333-62-6 HCAPLUS

CN Amylopectin, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9037-22-3
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 103334-25-4 HCAPLUS

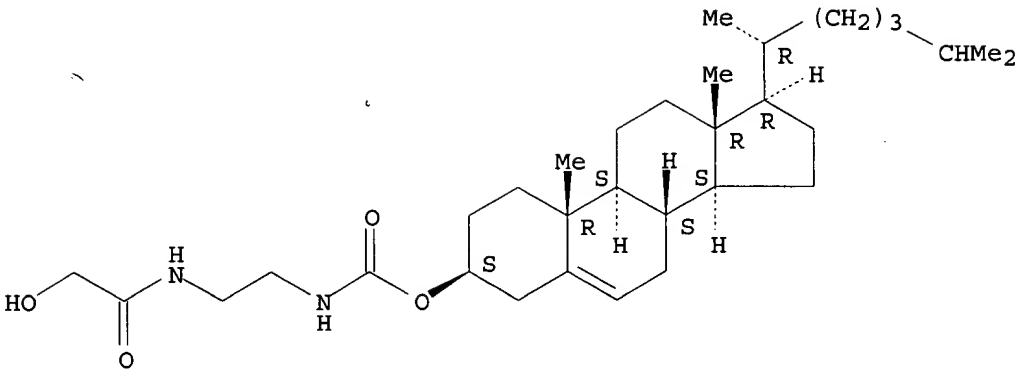
CN Pullulan, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5

CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 20 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1988:597005 HCAPLUS
DOCUMENT NUMBER: 109:197005
TITLE: Targeting cancer therapy in mice by use of newly developed immunoliposomes bearing adriamycin
AUTHOR(S): Hirota, Masaki; Fukushima, Kiyoyasu; Hiratani, Kazuhito; Kadota, Junichi; Kawano, Kenji; Oka, Mikio; Tomonaga, Akimitsu; Hara, Kohei; Sato, Toshinori; Sunamoto, Junzo
CORPORATE SOURCE: Sch. Med., Nagasaki Univ., Nagasaki, Japan
SOURCE: J. Liposome Res. (1988), 1(1), 15-33
CODEN: JLREE7; ISSN: 0898-2104
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Polysaccharide-coated liposomes were developed to improve the stability of conventional liposomes against biochem. and physicochem. stimuli. Pullulan (MW 5 .times. 104) was used as the polysaccharide. The mouse IgM monoclonal antibody (CSLEX 1) recognizes a sialosylated Lex, which is a tumor-specific antigen in athymic mice. The IgM antibody was reduced with cysteine to obtain the subunit (IgMs) that remained biol. active. The IgMs was accumulated in an antigen-pos. tumor in vivo. Subsequently, it was conjugated with the pullulan-coated liposome to form an immunoliposome. Tissue distribution studies demonstrated that immunoliposomes were more efficiently targeted to an implanted tumor than to the polysaccharide-coated liposomes. This is accompanied by a drastic decrease in liver uptake of the immunoliposomes. Furthermore, adriamycin-encapsulated immunoliposomes inhibited the growth of the implanted tumor more effectively than did the simple pullulan-coated liposomes.

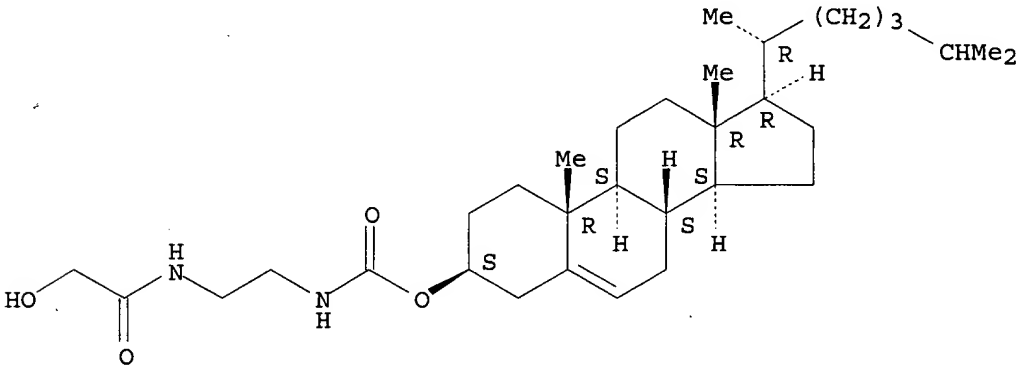
CC 63-5 (Pharmaceuticals)
Section cross-reference(s): 1, 15

IT **103334-25-4P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and reaction with maleimidobutyryloxy succinimide)
IT **103334-25-4P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and reaction with maleimidobutyryloxy succinimide)
RN 103334-25-4 HCAPLUS
CN Pullulan, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 21 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1987:561487 HCAPLUS
DOCUMENT NUMBER: 107:161487
TITLE: A newly developed immunoliposome - an egg phosphatidylcholine liposome coated with pullulan bearing both a cholesterol moiety and an IgMs fragment
AUTHOR(S): Sunamoto, Junzo; Sato, Toshinori; Hirota, Masaki; Fukushima, Kiyoyasu; Hiratani, Kazuhito; Hara, Kohei
CORPORATE SOURCE: Fac. Eng., Nagasaki Univ., Nagasaki, 852, Japan
SOURCE: Biochim. Biophys. Acta (1987), 898(3), 323-30
CODEN: BBACAQ; ISSN: 0006-3002
DOCUMENT TYPE: Journal
LANGUAGE: English
AB An improved methodol. for providing a more stable and targetable drug carrier involves the synthesis of a newly designed immunoliposome by coating the outermost surface of large oligolamellar vesicles of egg phosphatidylcholine with the polysaccharide pullulan, modified to carry both cholesterol, as the hydrophobic anchor, and the monoclonal antibody

fragment (anti-sialosyl LewisX, IgMs) as the sensory device. Compared with the binding of pullulan-coated liposomes, that of this immunoliposome to specific cells in vitro was significantly increased by factors of 447 to PC-9 and 295 to KATO-III, but only by a factor of 148 to the less specific cell 3LL. This strong and specific binding of the immunoliposome to the cell surface of PC-9 was also confirmed by a fluorescence-microscopic investigation using the immunoliposome, which bore the hydrophobic fluorescent probe, terbium trisacetylacetonate, in the liposomal membrane.

CC 63-5 (Pharmaceuticals)

IT 80307-12-6D, reaction products with cholesterol-bearing pullulan
103334-25-4D, reaction products with maleimidobutyryloxysuccinimide and IgM subunit
RL: BIOL (Biological study)
(immunoliposomes coating with, for drug delivery)

IT **103334-25-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

IT **103334-25-4D**, reaction products with maleimidobutyryloxysuccinimide and IgM subunit
RL: BIOL (Biological study)
(immunoliposomes coating with, for drug delivery)

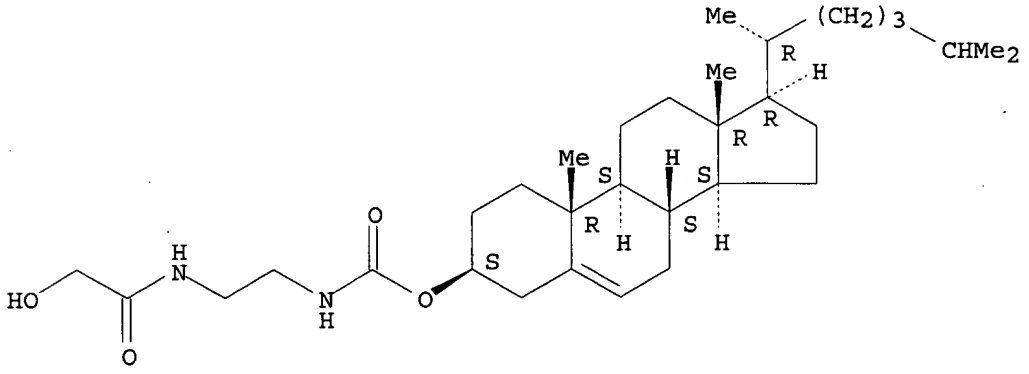
RN 103334-25-4 HCAPLUS

CN Pullulan, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of

L33 ANSWER 22 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1986:457401 HCAPLUS
DOCUMENT NUMBER: 105:57401
TITLE: Improved stability of black lipid membranes by coating with polysaccharide derivatives bearing hydrophobic anchor groups
AUTHOR(S): Moellerfeld, J.; Prass, W.; Ringsdorf, H.; Hamazaki, H.; Sunamoto, J.
CORPORATE SOURCE: Inst. Org. Chem., Univ. Mainz, Mainz, D-6500, Fed. Rep. Ger.
SOURCE: Biochim. Biophys. Acta (1986), 857(2), 265-70
CODEN: BBACAQ; ISSN: 0006-3002
DOCUMENT TYPE: Journal
LANGUAGE: English

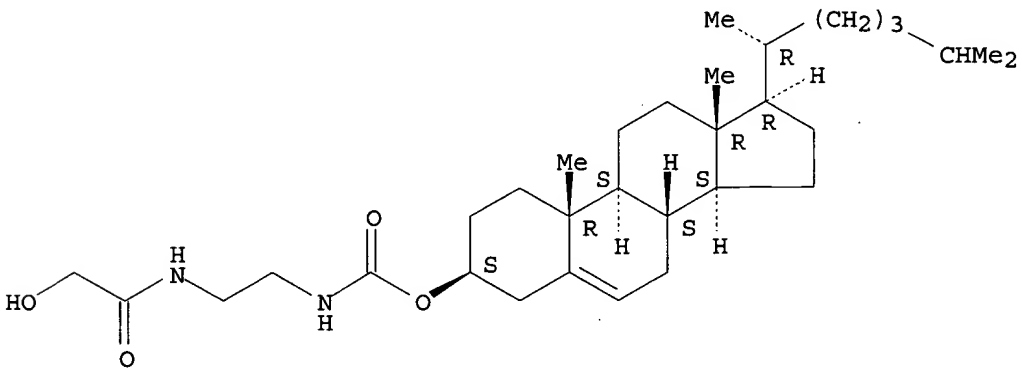
AB Black lipid membranes made from glycerol monooleate and diphytanoylphosphatidylcholine were coated with modified polysaccharides (amylopectins and pullulans) bearing hydrophobic palmitoyl and cholesteryl moieties. The changes in membrane structure were investigated by using dipicrylamine, a lipophilic ion, as membrane probe. The kinetics of ion transport through the black lipid membranes were studied by using the charge pulse relaxation technique. With this technique, it was possible to detect the insertion of the hydrophobic anchor groups of the polysaccharides into the membrane bilayer. As a result of the surface coating, these membranes exhibit a drastically increased long-term stability.

CC 9-10 (Biochemical Methods)
Section cross-reference(s): 6
IT 53572-58-0 86090-06-4 **103333-62-6 103334-25-4**
RL: ANST (Analytical study)
(stabilization by, of lipid bilayer membrane)
IT **103333-62-6 103334-25-4**
RL: ANST (Analytical study)
(stabilization by, of lipid bilayer membrane)
RN 103333-62-6 HCAPLUS
CN Amylopectin, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9037-22-3
CMF Unspecified
CCI PMS, MAN

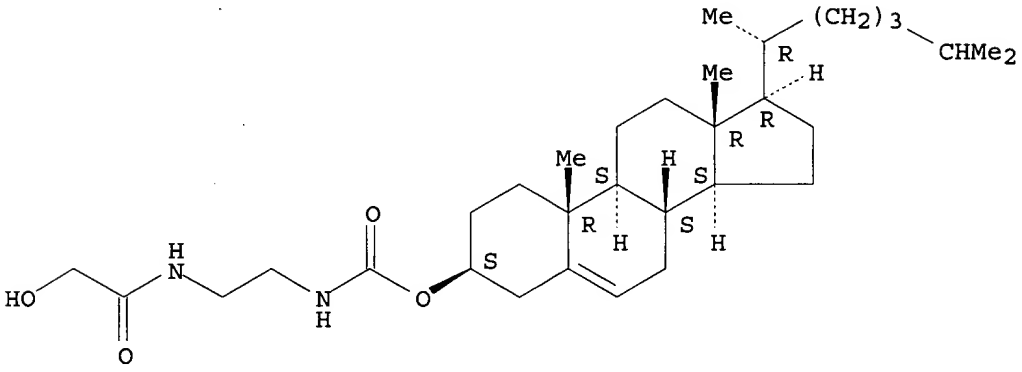
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 103334-25-4 HCAPLUS
CN Pullulan, 2-[[2-[[[[(3.beta.)-cholest-5-en-3-yl]oxy]carbonyl]amino]ethyl]amino]-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 166514-08-5
CMF C32 H54 N2 O4
CDES 4:3B.CHOLEST

Absolute stereochemistry.



CM 2

CRN 9057-02-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***